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The Journal of the International College of Surgeons

PUBLISHED BIMONTHLY BY
THE UNITED STATES CHAPTER OF THE INTERNATIONAL COLLEGE OF SURGEONS

JANUARY and APRIL, 1939

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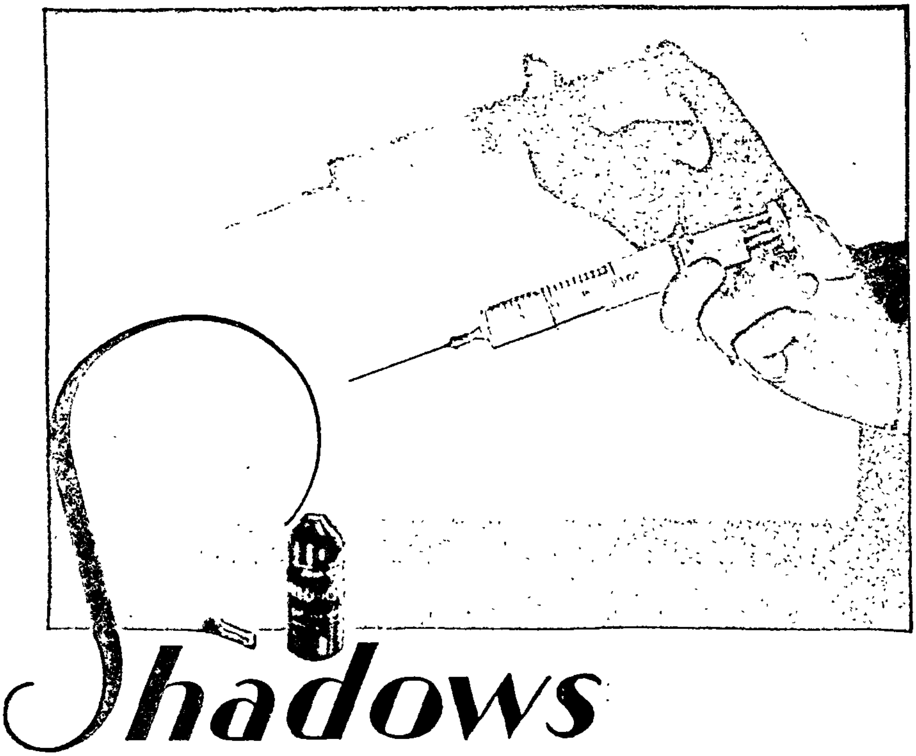

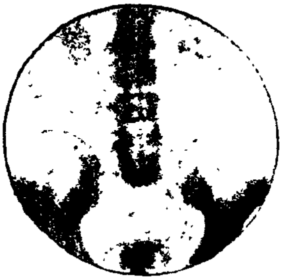

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Ownership: The Journal of the International College of Surgeons is a nonprofit publication owned and published by the United States Chapter.

Material: Scientific articles and communications on matters of surgical and related interests are invited. These must be submitted to the Editorial Board, which reserves the right to reject any material deemed unsatisfactory. All manuscripts are subject to editorial modification.

Scientific Papers: The publication of scientific papers in the Journal is not limited to the Members and Fellows. Any surgeon may submit original contributions, which will be considered by the Editorial Board for acceptance. Thus, while the Journal is the official organ of the International College of Surgeons, it is also an open forum for the expression of contemporary surgical advancement, thought and research. There is no discrimination as to those who may submit original papers; it is the scientific value of the contribution that determines its acceptability for publication.

Article I, Section V, of the Constitution of the College reads:

"It is strictly non-sectarian and non-political; it is decidedly against arbitrary restriction of merit and is free from prejudices, and will recognize the SURGEON and his accomplishments, and will not be influenced by his financial, political and other irrelevant status."

Exclusive Publication: Original articles are accepted with the understanding that they are contributed only to the Journal of the International College of Surgeons.

Manuscripts: All correspondence relating to the submission, acceptance, rejection or publication of manuscripts, as well as books and monographs for review, programs and reports of proceedings of societies and general communications should be addressed to the Editorial Office, 850 West Irving Park Boulevard, Chicago, Ill., U. S. A. Except where special arrangements are made, return first-class postage must accompany manuscripts. Otherwise this office cannot be held responsible for the material sent.

All manuscripts must be typed, double-spaced, on one side of standard manuscript sheets; the left margin should be 1½ inches in width to permit proper editing. Manuscripts should bear the address of the author. No manuscript will be accepted for publication without consideration by the Editor-in-Chief and the approval of the Editorial Board.

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For information about membership in the International College of Surgeons and other matters pertaining thereto, address Dr. Edward Frankel, Jr., Executive Secretary, 217 East Seventeenth St., New York City.

Membership fees and dues for the United States Chapter shall be made payable to the United States Chapter of the International College of Surgeons and sent to Dr. Benjamin I. Golden, Golden Clinic, Elkins, W. Va.

Subscription: The Journal will be published every two months. Subscription rates are per annum, net prepaid, $6.00 (U. S. A. funds) in the United States, its possessions and Canada. The rate for foreign countries is $7.00 (U. S. A. funds), net prepaid. Checks, drafts and money orders should be drawn to the order of Journal of the International College of Surgeons. Unless the subscriber definitely requests, in writing, discontinuation after the expiration of annual subscription, it is assumed he still desires to receive the Journal, and he will be billed for the succeeding volumes.

Members, Fellows and officers of the International College of Surgeons and chapters do not pay additional subscription fees for the Journal. These are included in the annual dues.

* * *

ASSEMBLY OF THE INTERNATIONAL COLLEGE OF SURGEONS,
ROOSEVELT HOTEL, NEW YORK CITY, MAY 21 TO 25

VISIT OUR EXHIBITS

Editorials

THE IMPORTANCE OF PATENTS AND COPYRIGHTS TO THE SURGICAL PROFESSION

WHEN the founders of America drafted the Constitution they realized that in order to promote the progress of science and the useful arts it would be necessary to secure for limited times to *authors* and *inventors* the exclusive right to their writings and their discoveries (Article 1, Section 8, of the Constitution of the United States of America).

Since 1934 the American Association for the Advancement of Science has been studying the effect of medical inventions being patented. A. G. Connelly, of Wilmington, Del., an expert on patent law (*Science* 86:384, 1937) is convinced that the true position in this controversy, from the standpoint of both the medical profession and the general public is *"That it is unethical not to patent medical inventions"* and shows: (*a*) Even though the inventor refrains from patenting his invention he does not necessarily prevent others from patenting it. (*b*) If a patent is obtained by others it may be developed in a manner which is detrimental to the public, and in any event such development depends upon the discretion of another. (*c*) If the invention is not patented there can be very little control over the quality of the product, and over the price at which it is offered to the public.

The House of Delegates of the American Medical Association adopted the following resolution in June 1914:

"*Resolved*, That the Board of Trustees of the American Medical Association shall be permitted to accept at their discretion patents for medical and surgical instruments and appliances and to keep these patents as Trustees for the benefit of the profession and the public, provided that neither the American Medical Association nor the patentee shall receive remuneration from these patents."

Dr. Morris Fishbein has suggested the development of a central organization capable of administrating medical patents for the benefit of the public. Such a central body might also set up requirements for clinical research in connection with the development of new products (*J. A. M. A.* 109:1539-1543 [Nov. 6] 1937).

The Engineers Society of Milwaukee has made a special study of the effect of McFarlane Bills H. R. 9259 and H. R. 10068, Cannery Bill H. R. 9815, O'Malley Bill H. R. 1666, and Randolph Bill H. R. 7939, which would compel a patentee to license his patent any time after three years from the date of granting—on scientific research, and they are unanimous in their opinion that any such change in the law would seriously reduce the funds allotted to research (Ball, J. D.: *Milwaukee Engineering* 18:7-8, 1938).

We in surgery, who are working daily with instruments and appliances which are patented, realize that the time and expense has been great in developing the science of surgery to its present position and are jealous of the institutions with large endowments received directly or indirectly from patent royalties which permit unlimited [illegible]tal resources.

ANNOUNCEMENTS

INTERNATIONAL ASSEMBLY OF THE INTERNATIONAL COLLEGE OF SURGEONS

The international assembly of the International College of Surgeons will be held in New York City, May 21 to 25, under the presidency of Dr. André Crotti and general executive chairmanship of Dr. Edward Frankel, Jr., with headquarters at the Roosevelt Hotel.

Committee on Scientific Program: Dr. Fred H. Albee, Chairman; Dr. William Seaman Bainbridge, Vice Chairman; Dr. Charles H. Arnold, Secretary; Drs. B. Brooke Bland, Walter E. Dandy and Duncan Macpherson.

There will be scientific and commercial exhibits.

For information address Dr. Edward Frankel, Jr., 217 East Seventeenth St., New York, N. Y.

AWARDS

As previously announced (*Transactions of the International College of Surgeons*, 1:104 (July) 1938), the United States Chapter of the International College of Surgeons will award prizes for the best original study in thoracic surgery, in neurosurgery, and in otolaryngologic surgery. The prize for thoracic surgery will be $500; the prizes for neurosurgery and for otolaryngologic surgery will be each a diploma of merit.

CHANGE OF NAME

The TRANSACTIONS OF THE INTERNATIONAL COLLEGE OF SURGEONS will hereafter be known as the JOURNAL OF THE INTERNATIONAL COLLEGE OF SURGEONS. It is felt that the latter title is more significant of the true character of the publication, which does not confine itself to reporting activities of the College but is concerned with the field of surgery in its widest sense.

FREQUENCY OF "JOURNAL" AUGMENTED

The editors and executive council are pleased to announce that beginning with this issue the JOURNAL will appear every two months instead of quarterly. This is the result of the warm reception the JOURNAL has received. It is hoped that eventually it will become a monthly publication.

◆

FOR INFORMATION ABOUT ASSOCIATE MEMBERSHIP, MEMBERSHIP AND FELLOWSHIP ADDRESS DR. EDWARD FRANKEL, JR., EXECUTIVE SECRETARY OF THE UNITED STATES CHAPTER OF THE INTERNATIONAL COLLEGE OF SURGEONS, 217 EAST SEVENTEENTH ST., NEW YORK CITY

LESIONS OF THE CRANIAL NERVES

DIAGNOSIS AND TREATMENT*

WALTER E. DANDY, M.D., F.A.C.S.
BALTIMORE

THERE are several pains which may, but should not, be confused with trigeminal neuralgia, and it is of the utmost importance that no mistake be made in the differential diagnosis. There is a pain which occurs in one tiny spot at some point in the face and is there at all times—twenty-four hours of the day. It never radiates and never spreads. That pain, because it is in one spot, is called topalgia. This is, as one should readily realize, a functional or psychogenic pain, because there is no organic pain referable to a nerve that can be confined to one spot all the time.

This pain is particularly distressing because it is constant and there is no possible surgical relief. The great mistake is to assume that because the cause of the pain is not known various attempts may be justified to cure it by pulling teeth, injecting nerves and operating on sinuses. And as is true with all psychogenic individuals, everything that is done to the patient makes him worse.

A second type of pain is also functional but is more difficult to diagnose because it is not so localized. This pain radiates beyond the domain of the fifth nerve. From an anatomic point of view it is obvious that it cannot be an organic pain. The pain radiates over one side of the face, spreads frequently to the other side of the face, and radiates down the neck, the shoulder and the back of the head. When a pain becomes diffuse and is not confined to an area of distribution of a nerve or of its neighboring branches through which it may communicate, that pain can be only functional. Again, the great mistake of assuming that the pain must be organic and of operating on these patients must be emphasized.

Both these patients and those with the topalgic pain, usually show the stigmas of a psychogenic individual They sleep poorly, have nightmares, and do not wish to associate with people, prefering to remain alone. They covet sympathy. They have weeping spells and not infrequently give a history of repeated nervous breakdowns. The pain must be judged on an anatomic basis, and on that basis one will not make the mistake of operating on these patients.

On the other hand, it is always a mistake to assume that a pain is functional *until one is very certain that it cannot* be organic. Organic pain should be the last and not the first diagnosis. At least no harm is done by assuming that the pain is functional. However, if the physician assumes that a functional pain is organic, allied perhaps to trigeminal neuralgia, and then cuts the fifth nerve and permanently paralyzes the sensory functions of the face, the patient in addition has the numbness for which he will not forgive the physician. It is bad to err on either side, but at least one should not err on the side of operating and leaving the patient with permanent sequelae.

SYMPATHETIC NEURALGIA

There is another common pain in the face, i. e., sympathetic neuralgia, so called because it has the stigmas referable to the sympathetic nervous system.

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* Read at the Second Annual Assembly of the United States Chapter of the International College of Surgeons, Oct 13, 1938.

without warning, the pain comes on anew. It has for many years been regarded as idiopathic, but there is a definite underlying gross cause for it. I should like to emphasize a few points concerning this pain, because it has a direct bearing on treatment. It is a pain that nearly always comes after the age of 25 and usually after the age of 30, but it may occur earlier (I have seen instances in patients as young as 15 years). It is, therefore, a disease of later life. It never is cured spontaneously; that is understandable because of the underlying causes. The pain will be there to the end of one's life. There may be remissions for months or even for a year or more, but there will be recurrences; this fact dictates the form of treatment that should be utilized.

This pain is never due to an infected tooth, infected nasal sinuses or a focal infection elsewhere in the system. These facts have an important bearing, too, on the treatment, because so many patients with this terrific pain (and it is one of the worst of all pains) are treated by removal of teeth, and many have lost all their teeth in a futile effort to find a cure. Again and again they are operated on for presumed sinus infections, perhaps in the hope that a focus of infection will be uncovered; but such treatment can accomplish nothing, because the underlying cause is never peripheral. A peripheral lesion along the sensory branch of the nerve can never produce a paroxysmal pain. A paroxysmal pain always means that the upper neuron that is between the ganglion of the nerve and the brain stem is affected, and only a lesion there can cause such pain. This is known by analyzing brain tumors. If one considers the tumors occurring along the course of the fifth nerve, there being many of them, one will find that there is never one with a lesion on the peripheral branch of the nerve; there is never one at the gasserian ganglion.

Always the tumor is on the sensory root of the fifth nerve!

If this fact is appreciated, unnecessary peripheral treatments are avoided. And if one realizes that the pain is never cured spontaneously, one concludes that the only sensible form of treatment is one that will produce a permanent cure and not one that will give only a transient period of relief.

There are, as is known, two forms of treatment for this pain: (1) injection or section of the nerve peripherally and (2) operation at the sensory root or gasserian ganglion. If the nerve is injected peripherally, relief is obtained for a year or eighteen months (if the injection is a good one). This procedure, therefore, must be repeated on each return of pain throughout the patient's life. By section of the sensory root of the fifth nerve a permanent cure is produced.

The treatment of trigeminal neuralgia was first introduced by Krause, of Berlin, in 1893, at which time the gasserian ganglion was removed. The results of that treatment have been improved on from year to year until it has become a safe and effective procedure. The mortality is now about 0.5 per cent.

But there are still many liabilities in the wake of this operative procedure as performed by modifications of Krause's temporal route. First, there is the so-called keratitis, which occurs in a high percentage of cases. Within twenty-four or forty-eight hours after the operation the eye becomes red, lusterless and dry. When this occurs it means that keratitis is developing. Once keratitis develops the patient from that time on throughout his life is subject to repeated attacks of similar character, and each attack keeps him an invalid for several days, or even weeks. Frequently the keratitis progresses, and if not properly treated produces perforation and loss of the eyeball. Many eyes have been lost in this way. The percentage is less with the best of surgical skill, but this condition is always a very *serious liability*. Nevertheless, it is a price the patient is willing to pay in order to be liberated from such a terrible pain. The next liability is loss of the motor division of the nerve in a high percentage of cases. From this loss the jaw deviates to one side and the teeth do not approximate on mastication. If the patient subsequently develops bilateral trigeminal neuralgia, which occurs in about 2 to 5 per cent of the cases, the second side cannot be operated on, because if both motor branches were lost swallowing would not be possible. A third liability of this operation is facial paralysis, which occurs in perhaps 10 per cent of the cases. In most instances there is partial recovery of function, but in some there is none. The paralysis is due to injury of the geniculate ganglion either directly or through tearing the superficial petrosal nerves out of the ganglion as the dura is stripped from the petrous temporal bone. And a fourth liability is that every now and then, from an extradural hemorrhage, epilepsy follows in the wake, and once epilepsy begins it is uncurable.

A few years ago, in developing an operation for the removal of acoustic tumors (cerebellar exposure) the sensory root of the fifth nerve was seen to be fully exposed. Why could not the nerve be divided at that point in patients with tic douloureux? It was tried and found much easier technically. After the cerebellum was elevated, the nerve was at once exposed without any intermediate bleeding. At first there appeared to be no reason to believe that division of the nerve at that point would have any advantage other than simplicity of performance over the division of the nerve by the temporal route. But as time went on and cases multiplied, it was found that all the liabilities that occurred with division by the temporal route were avoided.

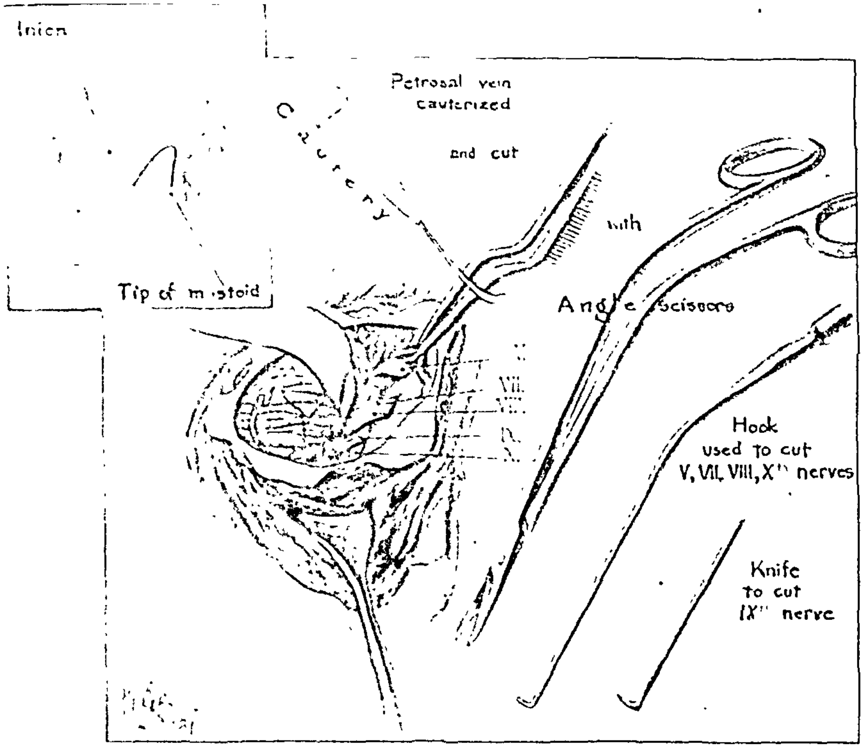
Inion
Petrosal vein cauterized and cut with
Cautery
Tip of mastoid
Angle Scissors
VII
Hook used to cut V, VII, VIII, X" nerves
Knife to cut IX" nerve

Fig. 1. Drawing showing the fifth, eighth and ninth nerves exposed intracranially by the same operative approach after elevating the cerebellum. Most of the nerves are now divided with the cautery; the fifth nerve is picked up with the forceps and the desired amount divided; the eighth nerve is picked up with the hook and the desired amount divided; the ninth nerve can be divided with the cautery or with an angle knife.

operative trauma to the gasserian ganglion; i. e., it was a trophic keratitis. It required only an instant to divide the nerve as exposed under the cerebellum, whereas by the temporal route one was constantly and over a long period packing bleeding vessels and thus traumatizing the gasserian ganglion and the sensory root. This trauma produced the keratitis. The avoidance of keratitis is alone a great advantage.

Then, too, the motor root of the nerve was never injured by such division, because it is quite a distance from the sensory root in the posterior cranial fossa. Therefore, in cases of bilateral tic douloureux one could divide both fifth nerves (and at a single operation) nerve. And one never caused epilepsy, because epilepsy is always due to a lesion in the cerebral hemisphere (never the cerebellum), and therefore only trauma to the cerebral hemisphere can produce it. As time went on I found that all the liabilities of the old operative procedure were avoided and at no additional risk (fig. 1).

Many years ago, at the suggestion of Spiller, of Philadelphia, fractional division of the nerve was introduced and appeared to be a distinct advance. One could often divide only part of the sensory root and still cure the pain. It was just as easy to divide the root partially in the posterior approach under the cerebellum. But there is always one deterrent to partial section of the nerve, namely, the danger of recurrence (about 10 per cent). I still prefer to do a partial section on younger patients, because it means a great deal to preserve the sensation to the face. However, in older persons I prefer to divide the nerve completely. If recurrence should develop, it is easy to reopen the wound and complete the division of the nerve.

Here is an interesting point in physiology: If one divides the posterior half or even three fourths of the sensory root of the nerve, it is possible to preserve practically the entire sensation to the face and at the same time cure the pain, regardless of the branch or branches involved. It was formerly believed that each third of the sensory root carried the fibers and functions of one of the peripheral branches of the nerve, i. e., that the lower third of the sensory root functioned for the lower peripheral division of the nerve, the middle third for the middle branch, and the upper third for the upper branch. But that is not so. After leaving the gasserian ganglion, the central fibers distribute themselves according to functions and not according to the peripheral divisions of the nerve.

One of the important advantages of the cerebellar operative attack is that in one out of every twenty cases (5 per cent) a tumor will be found in the cerebellopontine angle (fig. 2), pressing on the fifth nerve and causing this pain. In

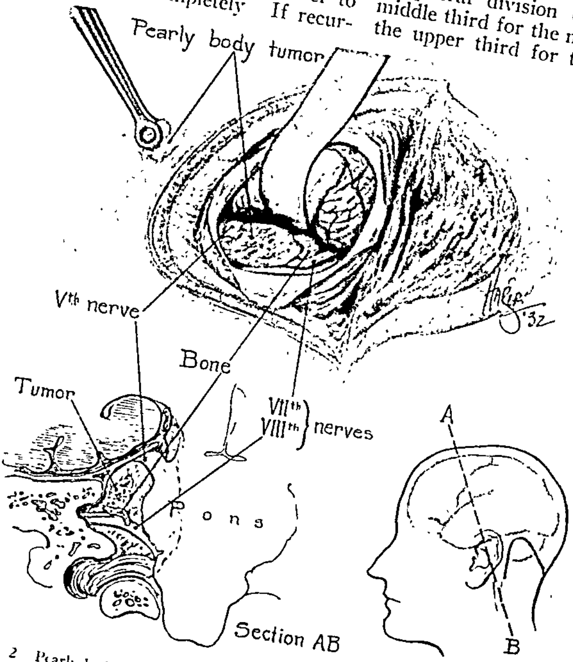

Fig. 2 Pearly body tumor in the cerebellopontine angle causing tic douloureux

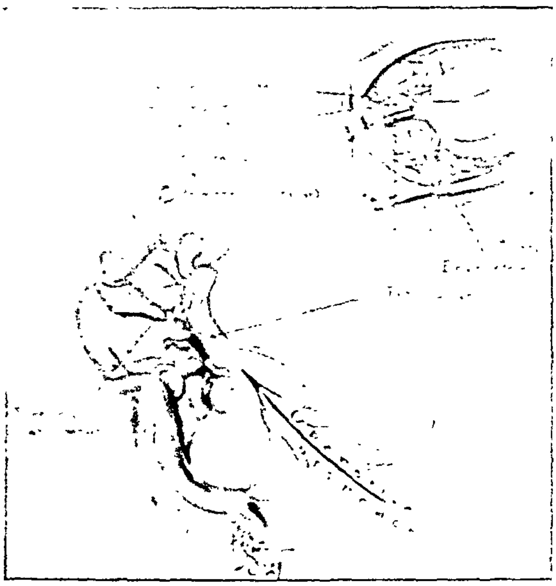

FIG. 3. Drawing showing arterial loop in the lateral cistern, indenting the sensory root of the fifth nerve and causing trigeminal neuralgia.

the pain appears in the later part of life, when the artery hardens from sclerosis (fig. 3).

GLOSSOPHARYNGEAL NEURALGIA

Glossopharyngeal neuralgia is closely akin to trigeminal neuralgia. It is, of course, referable to the ninth nerve. The pain is similar to trigeminal neuralgia in that it is paroxysmal. Since it is paroxysmal, the cause is referred to the sensory root of the nerve, not to its peripheral branch The pain is located in the back of the throat, in the region of the tonsil and the back of the tongue. It is a particularly devastating pain, because the patient cannot swallow without inducing it. Patients with this pain are apt to assume a characteristic posture, in which the head is bent forward and downward away from the side of the pain. They are trying to get the head in such a position that the saliva will drool out and away from the trigger zone. This dreadful pain is much less frequent than trigeminal neuralgia, but is common enough. And it, too, is simply cured by cutting the ninth nerve intracranially, the same operative approach being used as for the attack on the fifth nerve.

CARCINOMA OF THE MOUTH AND TONGUE

Carcinoma of the tongue frequently involves the peripheral distributions of both the fifth and the ninth nerve. It is usually a very painful lesion, preventing eating and causing rapid loss of weight. Since it is incurable, the procedure of choice is alcoholic injection of the third branch of the fifth nerve, as long as the pain is solely from the fifth nerve. But when the pain is in the distribution of the ninth nerve, injection will be of no avail, as it is not possible to inject the ninth nerve peripherally.

The patient, of course, is in constant torture with the ulceration in the mouth and the sensory endings painful at all times. One can stop the pain permanently, as long as it is one-sided, by dividing both the fifth and the ninth nerves intracranially, and it only takes an instant longer to divide the two than it does the one. This can be done simply; one can cocainize the sensory roots of these nerves before dividing them, thus rendering them painless.

There are not many procedures that offer greater relief of pain for patients with carcinoma of the mouth or tongue.

MÉNIÈRE'S DISEASE

I have heard it said, "I do not think there is such a disease as Ménière's disease." On the contrary, it is one of the most common diseases, as common as trigeminal neuralgia. As so often happens when one does not understand a syndrome, one does not see it. But if one cultivates that field intensively, cases begin to accumulate; instead of being a rare lesion, Ménière's disease is found to occur with great frequency.

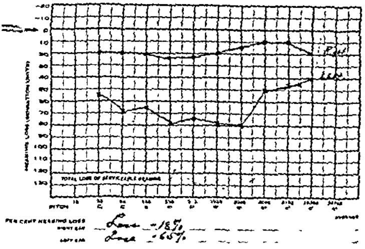

Fig 4 Typical audiogram of a patient with unilateral Ménière's disease, showing normal hearing in one ear and reduced hearing in the other

It is, too, one of the simplest diseases to cure and to cure with no residual effects. It is one of the easiest syndromes to recognize. There occur sudden attacks of terrific dizziness in which objects appear to whirl or move. It is a paroxysmal disturbance like trigeminal neuralgia, but it is a disturbance of the function of the eighth nerve and is, therefore, concerned with equilibrium or its human counterpart, the visual disturbance of moving objects. A patient, perfectly normal in every other way, suddenly has an attack of terrific dizziness. This lasts for a few minutes, more frequently a few hours, sometimes days, and then passes off. The patient is well again until the next attack. Like tic douloureux, these attacks never stop spontaneously. Nor are these attacks ever due to a middle ear infection, just as trigeminal neuralgia is never due to an infection of the paranasal sinuses or teeth.

Ménière's disease is a series of these recurring attacks of dizziness, but that dizziness has one characteristic which is absolute—objects appear to rotate or move. It is entirely unlike swoony dizziness, because it is referable to the eighth nerve, which is in conjunction with the semicircular canals. In addition to these recurring attacks of dizziness, there are usually nausea and vomiting, and nearly always tinnitus in one ear, and that ear is subtotally deaf (fig. 4). The syndrome, therefore, is dizzy attacks grafted on a subtotally deaf ear, with tinnitus in that ear and usually nausea and vomiting.

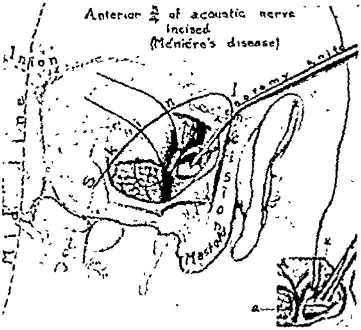

Fig 5. Sketch showing partial division of the auditory nerve, i e, division of the vestibular branch, which comprises the anterior half of the nerve. This leaves the auditory branch intact or practically so.

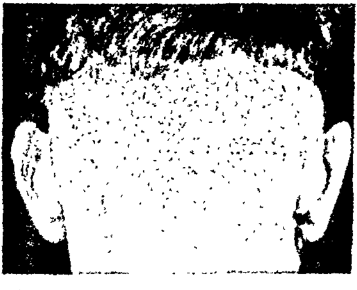

Fig 6 Photograph showing scar resulting from operation for trigeminal neuralgia, glossopharyngeal neuralgia, carcinoma of the tongue or Ménière's disease

There is only one other condition that can give this picture; that is pseudo-Ménière's disease, which is exact!

Ménière's disease except that there is no disturbance of hearing on either side. It is then not possible to tell to which ear the attacks are referred. There are nausea and vomiting, but no tinnitus. Ménière's disease is usually unilateral, but sooner or later in 10 per cent of the cases it may become bilateral.

The treatment for Ménière's disease is division of the eighth nerve, either partial or total. If the eighth nerve is totally divided, complete deafness will result on the side of division, but the hearing is usually of little practical value. In recent years I have in many cases been dividing only the

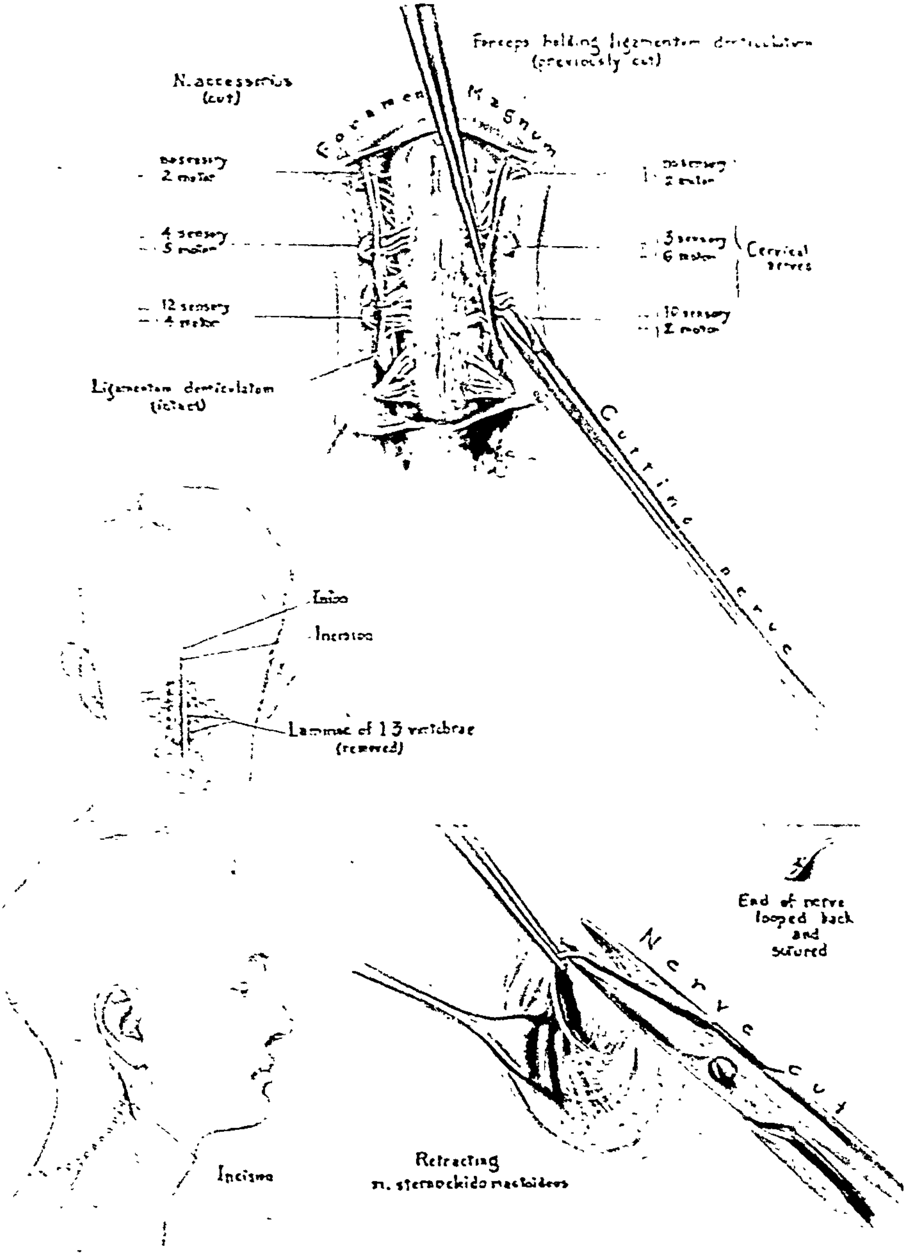

FIG. 7. Drawings illustrating the operation for torticollis. The first, the second, the third and sometimes the fourth motor branches are divided intraspinally, and immediately following this the spinal accessory nerves are divided in the neck.

vestibular branch of the nerve, leaving the cochlear branch intact so that no hearing is lost (fig. 5). I have found that over half of the cochlear branch of the nerve can be divided without any loss of hearing. If the patient has bilateral Ménière's disease or pseudo-Ménière's disease, all hearing should be preserved. Bilateral partial section of the nerve will then effect a cure. This can be done at a single operation. If there is any doubt as to whether the condition is unilateral or bilateral, it should always be assumed that it is unilateral, and the vestibular branch on one side only should be sectioned. The vestibular branch on the other side can be divided later if the dizzy attacks continue. But with both vestibular branches divided there is never dizziness again.

It is interesting that patients without the vestibular nerves cannot become seasick. Of course, bilateral division is reserved only for those in whom the attacks are severe enough to demand surgical treatment. Given a strictly unilateral form, the patient can be assured that there will be no more attacks of dizziness unless the nerve on the other side subsequently becomes involved.

COMMENT

All the cranial nerves concerned with the aforementioned disturbances are in the posterior cranial fossa and are reached by the same operative procedure. All of these procedures are the outgrowth of operative attack on acoustic tumors which for so many years were incurable, but now are removable with little risk (fig. 6).

SPASTIC TORTICOLLIS

All physicians have seen patients with spastic torticollis, in whom the neck is rigid, twisted, and pulled far over to one side. The cause is entirely unknown. The cure is produced by dividing both spinal accessory nerves plus the first, second, third and sometimes the fourth cervical motor roots intraspinally (fig. 7). The cervical motor nerves are sectioned through a high cervical laminectomy incision. The spinal accessory nerves are divided peripherally in the neck.

The first cure of this baffling condition was introduced by Dr. Finney, of Baltimore, who divided all the nerves peripherally in the neck. He stripped all the muscles and the nerves from the cervical spine. Other attempts before that had been unilateral procedures of various types, all of which were useless. Dr. Finney's end-results are now accomplished much more simply and easily by dividing these nerves intraspinally.

SUMMARY

A remarkable group of lesions are described, all curable with almost no mortality and with few and no serious residual effects.

Sympathetic neuralgia is cured by removing the stellate ganglion in the neck. Trigeminal neuralgia is relieved by dividing the sensory root of the fifth nerve through a posterior intracranial incision, thus avoiding the liabilities accompanying removal of the gasserian ganglion. Glossopharyngeal neuralgia is cured by cutting the ninth nerve. The pain due to carcinoma of the mouth or tongue is aided by division of both the fifth and the ninth nerves; this must be unilateral. The treatment of Ménière's disease is partial or total division of the eighth nerve, also through the posterior intracranial approach.

RÉSUMÉ

Lésions des nerfs crâniens.

Un groupe remarquable de lésions est décrit, toutes curables, avec une faible mortalité et avec peu de [illegible] graves. La névralgie sy[illegible] est guérie par l'ablation [illegible] stellaire du cou. La [illegible]

jumeau est soulagée par la division de la racine sensitive du cinquième nerf, effectuée par une incision postérieure intra-crânienne; ainsi on évite l'enlèvement du ganglion de Gasser. On peut guérir la névralgie du nerf glosso-pharyngien par la section de ce nerf. La douleur due à un carcinome de la bouche ou de la langue est soulagée par la division du cinquième et du neuviènne nerf; cette division doit être unilatérale. Le traitement de la maladie de Ménière demande la division partielle ou totale du huitième nerf. Cette division sera aussi effectuée par la voie postérieure intra-crânienne.

ZUSAMMENFASSUNG

Erkrankungen der Hirnnerven

Der Autor beschreibt eine beachtliche Anzahl von Hirnnervenerkrankungen, die fast ohne Todesfälle geheilt wurden und nur geringe und leichte Spuren hinterliessen. Sympathischen Neuralgie wird geheilt durch Exstirpation des Ganglion stellatum am Hals. Besserung der Trigeminusneuralgie wird erzielt durch Durchtrennung der sensiblen Wurzel des V. Nerven mittels eines hinteren intracraniellen Schnittes, ein Verfahren, vermittels dessen man die Schwierigkeiten, die an eine Entfernung des Ganglion Gasseri gebunden sind, vermeiden kann. Glossopharyngeusneuralgie wird behandelt durch Durchtrennung des IX. Nerven. Schmerzen verursacht durch Karzinom der Zunge oder der Mundhöhle werden erleichtert durch einseitige Durchtrennung der Nerven V und IX. Behandlung der Ménièreschen Erkrankung besteht in einer teilweisen oder totalen Durchtrennung des VIII. Nerven, ebenfalls mittels des hinteren intrakraniellen Verfahrens.

SUMARIO

Lesión de los nervios craniales

Un grupo considerable de lesiones, todas curables casi sin mortalidad y con pocos y no serios efectos residuales es descrito.

La neuralgia simpática se cura con la extirpación del ganglio estrellado (ganglio inferior del cuello). La neuralgia trigeminal se alivia con la sección de la raiz sensitiva del quinto nervio á travez de una incisión intracraneal posterior, y de esta manera se evitan las dificultades que acompañan le extirpación del ganglio de Gasser. La neuralgia glosofaringeal se cura por la sección del nervio noveno. El dolor debido al carcinoma de la boca o de la lengua es ayudado por la sección de los nervios quinto y noveno; esta debe ser unilateral. Él tratamiento de la enfermedad de Ménière es la división total o parcial del octavo nervio, también á travez de la via intracraneal posterior.

RIASSUNTO

Lesioni dei nervi cranici

Un gruppo importante di lesioni di nervi cranici viene riportato: lesioni tutte guaribili senza quasi mortalità e con pochi e leggeri effetti residuali.

La nevralgia del simpatico viene guarita con la remozione del ganglio stellato nel collo. La nevralgia del trigemino è alleviata con la recisione del ramo sensorio del V, attaverso una incisione intracraniale posteriore, evitando cosi i pericoli che accompagnano la remozione del ganglio di Gasser. La nevralgia del n. glossofaringeo è curata con la recisione del IX. Il dolore dovuto a carcinoma della bocca o della lingua è alleviato dalla recisione de V e del IX (deve però essere unilaterale). Il trattamento della Malatta di Ménière consiste nella divisione parziale o totale dell' VIII, per via intracranica posteriore.

SUBCAPITAL FRACTURES OF THE HIP

WHY DO NOT THESE UNITE AS OTHER FRACTURES?*

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It is my belief that because of inadequate blood supply the treatment of subcapital fracture of the neck of the femur is a special problem differing from that of all other fractures. The prognosis as to union is the most unfavorable of that for all fractures—so unfavorable that Dr. Kellogg Speed in his oration on fractures before the Boston (1934) congress of the American College of Surgeons designated this fracture as unsolved. Dr. Speed's pessimistic attitude is amply borne out by a study of available statistics, some of which are as follows:

The British Commission on Fractures reported 22 per cent cases of union in all types of treatment of fractures of the central portion of the neck of the femur. In 1929 and 1930 a committee of the American Orthopedic Association studied this problem, making a survey of certain clinics in which as low a figure as 30 per cent cases of union was claimed. Within a year two hospitals in New York announced statistics showing 38 per cent cases of union, while a third hospital reported 46 per cent cases. All three hospitals reported 20 per cent cases of aseptic necrosis of the head of the femur in those cases in which union occurred, which was so marked that the condition simulated osteo-arthritis with flattening and mushrooming, and with symptoms so acute that in most cases arthrodesis of the joint was necessitated.

The cause of this unfortunate condition is undoubtedly inadequate blood supply to the femoral head. The crux of the situation is that many surgeons have failed to recognize the fact that a subcapital fracture of the hip is a different problem from that of other fractures, and have assumed that mere reduction and mechanical maintenance of the fragments in position were all that was required. For nearly twenty years, I[1] have contended that there were other factors entering into this particular fracture problem. A survey reveals an unusual situation, the importance of which, strange to say, has never been appreciated, especially when it is considered that success or failure of treatment depends on the recognition and overcoming of the difficulties disclosed. The capsule of the hip joint is attached to the neck of the femur obliquely and close to the base of the neck, and therefore a subcapital or central fracture of the neck of the femur is completely intra-articular (fig. 1). If it is completely intra-articular, with the resultant rupture of the retinacula all possible sources of blood supply to the head fragment from the trochanter region of the femur or its immediate neighborhood are cut off. This being so, the ligamentum teres can be the only remaining source of blood supply. The question then arises whether the ligamentum teres survives or is destroyed by fragment displacement at the time of the primary fracture, and, if not torn, whether it provides an adequate source of blood supply to the capital fragment. Wolcott and others have attempted to evaluate this by injecting the blood vessels of the ligamentum teres with mercury in cadaver specimens. In 15 per cent of cases Wolcott could not find blood vessels in the ligamentum teres of sufficient size to allow mercury to flow through them into the head or neck of the femur, and Henderson, Chandler and others have claimed as high a percentage of cases as 20 to 25. If the continuity of the ligament remains, blood vessels therein contained are sure to enlarge with the demand of blood to the capital fragment. Chandler and Kreuscher[2] in studies of 114 round ligaments from cadavers of persons aged 25 to 75 years found arteries in all.

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*Read at the Second Annual Assembly of the United States Chapter of the International College of Surgeons, Philadelphia, Oct 14, 1938

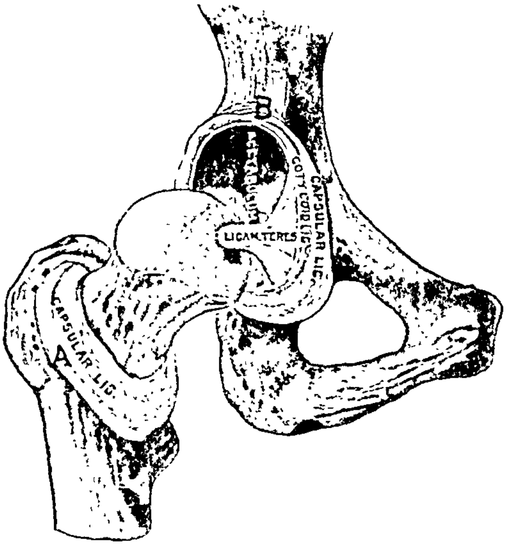

FIG. 1. The capsule of the hip joint has been removed from its insertion about the rim of the acetabulum to its insertion on the base of the neck of the femur. Between *A* and *B* the capsule is not adherent to the femoral neck at any point. Therefore a fracture of this portion of the neck is completely intra-articular, and the sole source of blood supply to the capital fragment must be via the ligamentum teres (after Testut: Traité d'anatomie humaine, Paris, O. Doin, 1899-1892).

The next question to be considered is the frequency with which the ligamentum teres or its blood vessels have been destroyed by the trauma producing the primary fracture, and in this regard there are some important observations not to be overlooked.

During the past twenty five years I have performed 419 reconstruction operations for nonunion with marked absorption of the femoral neck, and have in each case removed the head of the femur. Some of these operations were done during the period of my service in the World War. In no instance was there a fibrous union, and in every case the synovial fluid extended from the joint through and between the fracture fragments. A careful check was always made by myself and my associates of the condition of the ligamentum teres at the time of the operation, and it may seem surprising that in 417 of these cases we found not the slightest evidence of bleeding at the cotyloid notch where the ligamentum teres is inserted into the acetabulum, which would have occurred if a vascular ligament had been evulsed or torn at operation. In a large majority of cases, all ligamentous tissue appeared to have been evulsed from the cotyloid notch; in the remaining cases tabs of ligamentous tissue were found attached to the cotyloid notch of the acetabulum and fovea of the head of the femur, or both. In two cases the ligamentum teres was found intact. In one of these the fracture was found to be at the center of the neck and due to a rifle bullet which was discovered at operation and removed from between the ununited fragments. The thought would occur to one that, since the neck of the femur was severed by a bullet, it might at the time have produced shock with its resultant muscle flaccidity. Therefore, the muscle spasm incident to the usual fracture did not occur and force the distal fragment of the femur upward, thus rotating the head in the acetabulum upward on the outside and the fovea of the head downward on the inside, to such a degree as to tear or evulse the ligamentum teres. This assumption is strengthened by the fact that the capsule is loose and alone determines the extremes of motion of the joint solely when the bony framework of the joint is intact, but has no influence in curbing rotation of the head in the event of fracture.

It is believed that the rotation of the head which tears the ligamentum teres is brought about by the concerted spasmodic contraction of two powerful groups of muscles at the time of fracture, as follows: While the inward and outward rotators of the hip pull mesially on their osseous insertion (the great trochanter), thus holding the fracture surfaces of both capital and distal fracture fragments firmly together like the cogs of cog-wheels (fig. 2, left), at the same time the more powerful muscles of the thigh force the distal fragment upward, thus rotating the fracture end of the spherical capital fragment upward and consequently the fovea side of this head fragment downward, separating the origin and insertion of the ligamentum teres and in this way tearing or evulsing this relatively weak structure.

Frederick Henry Gerrish,[5] the anatomist, made the following statement:

> The ligamentum teres (round ligament) is not *round*, but a triangular, flat interarticular band attached by its apex to the upper half of the depression on the head of the femur, and by its base to the transverse ligament and the margins of the cotyloid notch, the ischial portion being the stronger. It is surrounded by synovial membrane, and represents a migrated portion of the pectineus muscle. It conveys a small branch of the obturator artery to the head of the femur. It is torn in dislocation of the femur. . . . The ligamentum teres is put on the stretch in flexion with abduction or outward rotation, or both, but it is too weak to be of use in resisting these movements or in strengthening the joint

Dr. Gwilym G. Davis,[4] the eminent surgical anatomist, stated:

> The ligamentum teres is composed of synovial and connective tissue. It is not strong and ruptures at about 14 kilos (30 pounds); the small artery it contains affords nourishment for itself alone, only a very small amount of blood going to the head of the femur. Bland Sutton regards it as a vestigial structure and a regression of the pectineus muscle. It is too weak to add much to the strength of the joint, and the view of Allis that its function is to distribute the synovial fluid and act as a lubricating agent is probably correct. The great pressure to which the articular surfaces of the hip-joint are subjected requires special lubrication and this is furnished by the ligamentum teres and Haversian gland.

From these studies, it is deduced that in 417 of 419 cases of subcapital fracture the weak ligamentum teres was destroyed by torsion or rotation incident to the explosive displacement at the time of fracture. The extreme force either evulsed the ligamentum teres from the acetabulum or head of the femur (more frequently the former occurs) or ruptured the ligament by a twisting or shearing motion. After many months or, often, many years, it is difficult to deduce accurately the circumstances associated with the destruction of the ligamentum teres. Varying degrees of fibrous adhesions to the periphery of the head are sometimes found, but when severed in removal of the head they have never been found to bleed to any appreciable extent, thus indicating that they have not been a source of blood supply to the capital fragment.

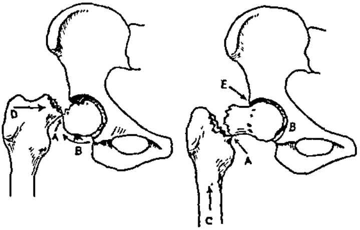

FIG. 2. The drawing on the left illustrates fracture near the neck of the femur, with rupture of the ligamentum teres. The drawing on the right shows fracture occurring farther out on the neck of the femur. When the intense involuntary muscle spasm incident to a fracture thrusts the femoral shaft upward, as indicated by the arrow at *C*, in transtrochanteric fractures, the capital fragment is prevented from rotating upward sufficiently to rupture the ligamentum teres at *B* because of impingement of the neck of the femur on the rim of the acetabulum at *E*.

If the teres ligament has not been ruptured, there is every reason to believe that its continuity would serve to conduct induced collateral circulation to the capital fragment, even if anatomically the blood vessels were me
it. The fracture is wholly

such as those of long bones, in which one frequently sees the sole callus deposited in the surrounding soft parts as a bridge between the fragments, and no *evidence* whatsoever of callus between the fractured surfaces. In subcapital fractures the space between the fracture surfaces is filled with synovial fluid; this is the only place where callus would occur, as there are no adherent surrounding soft parts (as in other fractures) to bring blood supply for callus formation or serve as a scaffolding in which the callus forms.

In this regard, Cunningham[3] stated:

> The fibrous stratum is reflected on to the neck of the femur, and it clothes the bone as far as the margin of the articular cartilage which covers the head. Along the line of reflection some fibres of the fibrous stratum proceed proximally on the neck of the femur and raise the synovial layer in the form of ridges These fibres are termed the retinacula or cervical ligaments.

This enveloping band of fibrous tissue is about ⅛ inch (0.3 cm.) in thickness and firmly adherent to the femoral neck. There is scarcely a chance of the avoidance of its complete rupture from the displacement associated with a fracture of the neck except in those primarily impacted. It has no callus-forming influence. Cotton was the first to point out that synovial fluid acts as an inhibitor to callus formation. An intense acute traumatic synovitis with joint distention must complicate subcapital (intra-articular) fracture, separating the fragments by forcing the synovial fluid between them. This supposition is further supported by the constant finding, at operation on patients showing nonunion, of synovial fluid between the fragments.

It is clear that it is impossible to determine at the time of subcapital unimpacted fractures whether the ligamentum teres suffered rupture. Of all fractures of this type coming under my care, only in those in which a reconstruction operation was performed because extensive bone absorption necessitated removal of the femoral head has the opportunity been afforded to check whether this ligamentum was torn or not. Among such cases the percentage of those with destruction has been very large—over 99. It is apparent that these findings have no bearing on those cases in which union occurs, following any type of treatment, or on those in which nonunion occurs without extensive absorption of bone, in which cases the bone-graft peg was employed and therefore no check was made as to whether the ligament suffered rupture or not.

TREATMENT

Since it is impossible to determine at primary treatment whether the capital fragment has been entirely cut off from all blood supply, it is urgent that until this is learned the initial treatment in all cases be designed to bring blood supply to this fragment; or, in the event that some other conservative or operative type of treatment has been employed, the surgeon should be ever vigilant to detect the earliest evidences of impending nonunion as disclosed by x-ray evidence of a slight change of relation of the fracture fragments or bone absorption at the fracture junction. There is abundant evidence to prove that many surgeons are too prone to conclude that union has occurred when many times it has not.

In this event, if the case is operable, prompt action should be taken and a bone-graft peg implanted after removal of the metal gadget, if one has been used.

The trustworthiness of the bone-graft peg has been proved by the fact that it was originally employed in much more unfavorable cases than those of fresh fractures, namely, cases of nonunion.

Use of the bone-graft peg in the treatment of selected cases of ununited fractures has resulted in about 94 per cent cases of bony union. About the same time that I published my first cases, Dr. Willis C. Campbell, using the same method, published statistics that were even a little better than mine. The significance of these results is extremely important, since Dr. Campbell and I were dealing with cases much more unfavorable than those of fresh fractures, first, because they were cases of nonunion, or pseudo-arthrosis, second, because the capital fragment had become practically a joint mouse, and, third, because the urge of primary repair had long ceased to exist.

It is further interesting to note that, through a fault in technic on my part in failing to approximate the fragments in three of these cases, I learned something of great significance concerning the function of the autogenous bone-graft peg.

In these cases the hiatus between the fragments, varying in extent from 1/2 to 2/3 inch (1.27 to 1.7 cm.), was spanned within the joint by the bone peg alone (fig. 3*A*). X-ray study at a later postoperative date showed that the peg in each instance constantly increased in size until it finally filled in the hiatus completely, and that, in spite of the fact that the fragments were separated and the peg was situated in the joint cavity with synovial fluid about it, the blood vessels extended through it from the trochanter fragment to the capital fragment, the peg by its inherent osteogenesis having filled this space between the fragments, with resultant union (fig. 3*B*). The importance of this observation is self-evident as showing the potentiality of the bone graft under most unfavorable conditions. If a metal agent had been used, there would not have been a chance of union in any of these cases. In this respect, however, it should be commented that in many instances I have observed that a graft has filled in spaces many times more extensive than those in the cases cited, even to as much as sixteen times the dimension of the widest hiatus, the only difference being that the long grafts were surrounded by soft tissue instead of synovial fluid.

Bone, being a supportive and relatively undifferentiated tissue, is able to suffer the absence of its blood supply for a considerable time without adverse effects, for the reason, among others, that it is extremely favorable for transplantation. The rapid and profuse vascularization of a bone graft is one of the most striking features encountered. When a portion of the complete diameter of a long skeletal bone has been replaced by a massive graft of much smaller diameter, not only will the whole shaft be restored to its complete diameter and strength, but also a completely vascularized marrow cavity will develop. The same phenomenon occurs in the use of a bone graft as a terminal structure, such as in building digits, in which a tibial bone graft is inserted into a tubular skin graft to restore a finger or thumb. In this instance there is a physiobiologic demand for blood at the distal end of this bone graft, and in response a collateral circulation is developed in the whole length of the graft to the degree of a marrow cavity with its incident blood vessels. The analogy is identical to that of the peg graft conveying blood to the anemic femoral head from the very vascular cancellous tissue of the trochanter (fig. 4). These characteristics, as well as the osteogenic capacity of the autogenous bone graft peg together with its mechanical strength (for immobilization purposes), determines it to be the ideal means of treatment in operable cases of both fresh and nonunited fractures of the central intra-articular portion of the neck of the femur. It is the only answer to the three needs in the treatment of such fractures, for (1) it furnishes ideal immobilization, (2) it provides a living scaffold for vascularization to the anemic head fragment, and (3) it brings an osteogenic, callus-forming material to the fracture junction.

To demonstrate this phenomenon, Sir Arthur Keith, the practical pathologist of England, prepared an extensive number of specimens that are on exhibition in the Museum of the Royal

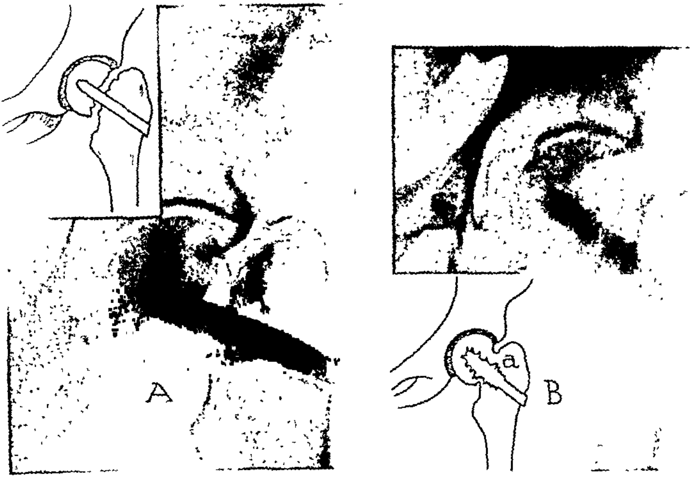

Fig 3. *A*, x-ray showing bone peg in place. *B*, same case as *A*, four and one-half months later. The x-ray, with the key schema, demonstrates the marked enlargement of the inner two thirds of the graft Bone growth is seen extending coincidentally from the trochanter.

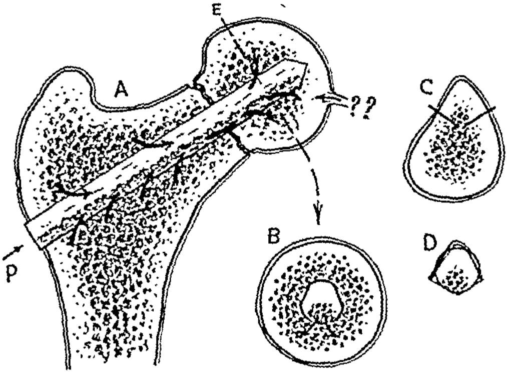

Fig. 4 Diagram illustrating blood supply to the femoral head (*A*) with peg graft (*P*) in place *B* *C* and *D* are cross-sections

College of Surgeons in London. The study of these specimens is most profitable. They were prepared and injected to show the profuse and early vascularization of bone grafts in general. In putting in bone grafts to take the place of portions of shafts of bone, my own experience has, in many instances, confirmed Keith's observations.

After most operations, the period of immobilization in double plaster of Paris spica casts is twelve weeks. The callus-forming capacity of the femoral bone is so low that one must allow a generous period. Whether the bone graft peg operation should be performed as the primary treatment is for the surgeon and the patient to decide. Some patients, of their own volition, have requested the operation.

To recapitulate, many surgeons are still being misled in their optimism to believe that union has taken place because the x-ray shows the fragments still in position, with fracture surfaces in close apposition, particularly if a metal gadget has been employed. In a recent case, three consultants gave the opinion at the end of ten months that union was solid, when, as was proved later, no union whatsoever had occurred.

It is of great importance with every type of treatment (except when the autogenous graft has been used), especially when any of the various kinds of metal fixation agents have been used, for the surgeon to be eternally vigilant in watching for the earliest evidence of the beginning of nonunion. Any change of position in the relation of fragment to fragment, even of the slightest degree, is evidence that union is not taking place. Soon proof will follow with bone absorption at the fracture junction indicating that there is an inadequate or total lack of blood supply, because of the rupture of the ligamentum teres as well as the retinacula by a twist or rotation of the head of the femur at the time of fracture. Repeatedly in the literature, mention has been made of the possible blood supply coming from the untorn portion of the capsule. This can refer only to the retinacula, which are not strictly capsule and which because of anatomic relationship are most likely to be completely ruptured by even slight displacement. In the latter event, the capital fragment is essentially a joint mouse. Under such conditions, if union is to be secured immediate action is urgent. With the fragments in good position, a bone-graft peg of at least ½ inch (1.27 cm.) diameter should be inserted.

SUMMARY

The outstanding obstacle to union of subcapital fractures of the neck of the femur is destruction of blood supply to the capital fragment, due to rotation of the femoral head in all cases without primary impaction, with consequent rupture of the ligamentum teres and the retinacula. The author found these structures ruptured in 417 of 419 cases when removing the femoral fragment in his reconstruction operation for nonunion with marked absorption of bone, with infiltrated synovial fluid between the fragments.

Studies have shown as low as 22 per cent cases of union with treatment by various methods. Treatment rests on: (1) reduction and fixation; (2) provision for conduction of blood to the anemic capital fragment; (3) provision of an osteogenic influence to the fracture junction. A tibial bone graft peg at least ½ inch (1.27 cm.) in diameter meets these requirements as no other plan does.

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RÉSUMÉ

Fractures sous-capitales du fémur

L'obstacle principal à l'union des fractures sous-capitales du col du fémur est la suppression de l'apport sanguin au fragment capital. Cela est dû à la rotation de la tête fémorale dans tous les cas sans pénétration, sans enfoncement, sans enclavement primitif. Cette rotation entraîne la rupture du ligament rond et des rétinacules. L'auteur constata la rupture de ces tissus dans 417 sur 419 cas qu'il a opérés par sa méthode réconstructive pour manque d'union avec absorption osseuse marquée et infiltration de synovie entre les fragments.

Les différentes méthodes employées dans les cas de cette nature n'obtiennent l'union osseuse que dans 22 pour cent des cas. Le traitement demande: (1) la réduction et la fixation, (2) de pourvoir à l'apport sanguin au fragment capital, (3) de pourvoir une influence osteogénique du siège de la fracture. Un greffon de 1.27 cm. de diamètre prélevé sur le tibia nous permet plus que toute outre méthode de remplir ces desiderata.

ZUSAMMENFASSUNG

Subcapitale Brüche des Schenkelhalses

Das Haupthindernis für eine Vereinigung und Heilung von subcapitalen Schenkelhalsbrüchen ist die Verminderung der Blutzufuhr zum proxmalen Fragment, verursacht durch die Drehung des Schenkelkopfes, die in allen Fallen ohne Impaktion erfolgt und die einen Riss des Ligamentum teres und der Retinakula zur Folge hat. Der Autor hat diese Risse in 417 Fällen bei 419 Operationen vorgefunden, wenn er im Verfolge seiner Wiederherstellungsoperation bei Nichtvereinigung der Fragmente eine Entfernung des Fragmentes vornahm; er fand gleichzeitig eine beträchtliche Absorption von Knochen und das Vorhandensein von eingedickter Synovialflüssigkeit zwischen den Fragmenten.

Bei Behandlung mit den verschiedensten Methoden konnten nur bis 22% Wiedervereinigung der Fragmente erzielt werden. Das Verfahren des Autors besteht in: (1) Reduktion und Fixation; (2) Herstellung einer Blutversorgungsmöglichkeit für das anämische Fragment; (3) Herstellung eines Anreizes zur Knochenbildung an der Bruchstelle. Ein Knochenspan von der Tibia von 1.27 cm. Diameter erfüllt diese Bedingungen besser als jede andere Massnahme.

SUMARIO

Fractura subcapital de la cadera

El obstáculo prominente de la union de la fractura subcapital del cuello del fémur es a destrucción de la irrigación sanguínea del fragmento capital, debido á la rotación de la cabeza femoral en todos los casos sin impacción primaria, con la ruptura consecuente de los ligamentos y la retinácula. El autor encontró estas estructuras rótas en 417 de 419 fracturas, cuando haciá la operación de reconstructión y extraía el fragmento femoral en los casos que no habiá union y que habiá marcada absorción del hueso, con infiltración de fluido sinovial entre los fragmentos.

El estudio ha mostrado resultados tan bajos como 22% en los casos de union con tratamiento por distintos métodos. El tratamiento incluye: (1) redución y fijación; (2) medidas para conducir la sangre al fragmento capital anémico; (3) medidas para ejercir una sobre la formación osteog

unión de la fractura. El injerto de una espiga de hueso de la tibia, por lo menos de 1.27 cm. de diámetro, llena estos requisitos como ninguna otra operación.

RIASSUNTO

Fratture sottocapitali del femore

La maggiore difficoltà nell'unione delle fratture sottocapitali del collo del femore è la minorata circolazione sanguigna del frammento capitale, dovuta alle rotazione della testa femorale, con conseguente rottura del ligamento teres e i retinacula. L'autore riscontro la rottura di questi tessuti in 417 dei 419 casi che ha operati col suo metodo ricostruttivo, per mancanza d'unione, con assorbimento osseo marcato, e infiltrazione sinoviale tra i frammenti.

La cura consiste: (1) riduzione e fissazione, (2) cercare di migliorare la circolazione sanguigna del frammento capitale anemico, (3) stimolare l'influenza osteogenica della frattura. Un innesto osseo di 1.27 cm. di diametro prelevato dalla tibia risponde nella migliore maniera ai requisiti sopra accennati.

VISIT THE EXHIBITS, ROOSEVELT HOTEL

Kny - Scheerer Instruments

Kny-Scheerer Corporation will present in Booth 30 of the convention hall an exhibit and demonstration of the Improved Albee Bone Mill, Dr. Albee's new oscillating saw attachment for laminectomies, circular osteotomies and osteoplastic skull work. See the new Moreira Set for Hip Fractures, devised by Dr. F. E. Godoy Moreira, São Paulo, Brazil. Also on display are many new surgeons' instruments, in both stainless and chrome.

Traction Table Demonstration

Featured in the exhibit of the Comper Manufacturing Company, at Booth 20 of the International Assembly exhibits will be the Albee-Comper Traction Table, in which Dr. Fred H. Albee has departed from the more conventional standards of fracture table design of adopting those advantages of the surgical operating table which most usefully apply to orthopedics and combining with them a simple and efficient apparatus for giving comprehensive orthopedic postures under traction as well as providing for fluoroscopic and x-ray examination before, during and after the operation.

Important Exhibit of Vitallium Appliances

At Booth 11 of the convention hall the Austenal Laboratories, Inc., will display a complete line of plates, nails, screws and special appliances made of vitallium. These fracture appliances have been demonstrated to be immune to body fluids, compatible with tissue, and do not interfere with normal bone growth. No other metal heretofore used in the internal fixation of fractures combines the same freedom from irritation with the requisite strength.

Metabolism Equipment

The Jones Metabolism Equipment Company will present in convention Booth 26 the most modern metabolism apparatus on the market. The Jones Motor-Basal eliminates corrections for barometric pressure and room temperature, and eliminates calculations. It is so simple that any one can learn to run it in a short time and yet is accurate enough to meet the most exacting requirements. An exclusive geometric device checks each test, eliminating possible error by the human element. It is guaranteed to perform with an accuracy greater than 99 per cent for the lifetime of the purchaser.

GASTRECTOMY FOR VARIOUS CONDITIONS*

JOHN F. ERDMANN, M.D., F.A.C.S.
and
HAROLD E. CLARK, M.D., F.A.C.S.
NEW YORK

ALTHOUGH we are not devoted to new and unusual instruments we are much impressed by the instruments for gastro-intestinal resection known as the De Petz and the Neuffer-Ulrich, modified by Professor Friedrich, along with the smaller and more recent one, the Von Seemen. These instruments consist of crushing blades with concealed staples or clips that are forced into the crushed area in two rows sufficiently separate to enable one to cut between with a cautery knife or the ordinary scalpel. Furthermore, the clips, due to an ingenious female blade, are forced together at this point to resemble a pretzel. The points thereby curve inward and upward so that there is no scratching or penetration. While most of these clips will be passed out through the intestinal canal, we have seen clips in x-ray pictures taken of the stomach twelve or eighteen months later with evidence of no more harm than if nonabsorbable antiseptic suture material was used.

There are many advantages in the use of these instruments, as observed in over 95 patients on whom they were used. Chief among these is hemostasis, a nonleaking closure of the distal and proximal portions, which eliminates many extra instruments, packs and assistants. With the use of the machine the severed ends are covered with a piece of gauze and placed outside the immediate operating area while other work progresses. This can be accomplished without thought of hemorrhage or infection due to spilling. The clips are buried with two sets of catgut sutures to a point within 2 inches (5.08 cm.) of the greater curvature. This area is left by the cloaca or fenestra which, on the gastric side, is made by excising this 2 inch area fully ½ inch (1.27 cm.) in breadth as the anastomosis advances.

As to the amount to be excised, in all cases of ulcer one half to two thirds or more of the stomach is removed. In cases of marginal ulcer as much of the tissue is removed as is necessary to give a clean area proximal to the original gastro-enterostomy opening. In cases of carcinoma one must remove well into healthy tissue, or a complete gastrectomy may be demanded.

In our series of over 90 cases up to March 1, 1938, there were 89 resections, with use of one or the other of these machines. Of these patients, 18 (15 males and 3 females) were operated on for duodenal ulcer, with a mortality of 27 per cent; 9 (all males) were operated on for marginal ulcers, with 4 deaths, a mortality of 44 per cent; 43 (22 males and 21 females), whose average age was 55 years, were operated on for carcinoma of the stomach, with 12 deaths, a mortality of 28 per cent; 17 (14 males and 3 females) were operated on for gastric ulcer, with a mortality of 11 per cent; 2 were operated on for sarcoma, with no deaths. In this series there were 4 cases of linitis plastica. An interesting observation was the fact that the average age of the females was ten years less than that of the males.

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*Read at the Second Annual Assembly of the United States Chapter of the International Col- of Surgeons, Philadelphia, Oct 13, 1938

TUMORS

A Krukenberg tumor was found in one patient four years after her original operation, a gastric resection. At that time the pathologist reported an ulcer, but the operator made a diagnosis of carcinoma. When the patient was reopened for a pelvic tumor (which proved to be a Krukenberg tumor) the entire abdominal cavity was found to be studded with carcinomatous metastases. The original specimen, fortunately, had not been destroyed, and on careful reexamination it was pronounced carcinoma.

Of the carcinomas, there were 26 adenocarcinomas, 17 of which had metastases, and 1 of which had perforated; 6 cases of scirrhous carcinoma, with 5 showing metastases, and 7 cases of colloid growth, with 5 showing metastases. One growth was considered to be adenocarcinomatous implantation on an old ulcer.

In a number of patients the gastric symptoms were negative. Others presented weakness as the only symptom. One case without symptoms was discovered in a routine insurance examination. Five patients gave a family history of carcinoma. To us, an outstanding symptom of gastric carcinoma is the total loss of appetite which we have observed occurring early in the disease. The red cell count was found in this series to be 3,500,000 or less, and the hemoglobin content about 70 per cent, falling as low as 29 per cent. Melena was observed in less than 25 per cent of the cases.

Sarcoma was found in 2 cases, giving an incidence of 2.2 per cent. This percentage is rather higher than the usual quotation of less than 1 per cent.

Case 1. A man 46 years of age gave a history of weakness over a period of six weeks, dyspnea on exertion and left epigastric discomfort related to food intake. The red cell count was 2,700,000 with a hemoglobin content of 42 per cent. The pathologic report was myoblastic sarcoma. There were no glandular metastases. An x-ray of the chest nineteen months post operatively showed infiltration of both lungs. Death occurred twenty months after operation.

Case 2. A woman 47 years of age gave a history of gastric pain over a period of nine months, with nausea and vomiting and a loss of 50 pounds (22.7 Kg.) in eighteen months. There was marked anemia. At operation in November 1937 a lymphosarcoma of the pylorus was found with invasion of the serous coat and omentum. At present the patient is being given x-ray treatments, as this type of growth is said to be benefited by x-rays.

GASTRIC ULCERS

There were 17 cases of gastric ulcer, 2 of which occurred in females. Two deaths were reported, both occurring in males. In 10 instances the lesion was found at the lesser curvature, being large in all of them. One patient presented multiple ulcers. In 3 instances perforations into the gastrohepatic omentum had occurred and in 2 into the pancreas. Chronicity was the paramount state and, also, recurrent attacks too numerous to mention. Two patients reported lapses of eight and twelve years, respectively, between attacks, the symptoms varying in duration from three months to twenty-three years. All had been under a dietary regimen for years. Some had been hospitalized one or more times. Many had adhered rigidly to a diet, only to meet with failure. Several had had previous gastric and other operations. One gave a history of 4 previous operations, the pertinent features being a cholecystectomy and gastrostomy in July 1925 and adhesions in 1932. An x-ray taken in 1937 showed 40 per cent retention.

A rather constant finding in the series was deficiency in urea nitrogen, chlorides, sugar and carbon dioxide on admission, in other words, a picture of starvation. The lowest red cell count in this group was 2,850,000, with a hemoglobin content of 42 per cent.

Of the 2 patients in this group who

died, one, aged 69, in thirty-two hours became cyanotic, with death resulting immediately. The other patient, aged 48, in eighteen hours developed a sudden rise in the pulse rate, with death resulting. Necropsies were not obtained in either case.

As already stated, the operation consisted of a resection, one half to almost complete, in all the cases in this series. The anastomoses were made after the method of Polya or Hofmeister (there were fewer of the former), with Balfour's antecolonic procedure on a few occasions. We are inclined to the Hofmeister method, although for years the Polya method was our choice. In the Balfour resection we have always added an entero-enterostomy, although there is a rapidly growing opinion that this is not necessary. Nevertheless, we feel most satisfied when the entero-enterostomy has been done. Shortly after Balfour described his antecolonic operation, the first author [J. F. Erdmann] was accustomed to call attention in his clinics to the possibility of the development of a jejunal trap, and he demonstrated such a condition in one of his patients. Since that time he has always added a jejunojejunostomy.

For six or eight years he has had a 16 or 18 F Levine or other type of tube introduced before the anesthesia was begun. During the operation extreme care is taken not to include the tube in the amputation. Before the completion of the anastomosis, 6 to 10 inches (15.24 to 25.4 cm.) of the tube are placed in the distal part of the jejunum. This, if perforated as the Wangensteen tube, will allow both feeding into the duodenum and siphonage of the stomach. This is exceptionally satisfactory to the surgeon and gives great relief to the patient. Also, the feeding of fluids into the duodenum, even in the period immediately after operation, relieves the patient of much puncturing for infusions or clyses. This tube is kept in position for four to eight days, depending on the postoperative reaction.

Dehiscence of the walls of the inverted duodenal stump occurs, we believe, more frequently than is cited in the literature. It has occurred in 2 patients in the past twelve months.

CASE 1. Three weeks after discharge from the hospital a man had sudden pain in the epigastrium after a hearty meal. The operation had been done six weeks previous to the attack. He was readmitted to the hospital, and emergency operation revealed complete dehiscence with a secondary cavity, the wall of which had perforated into the peritoneal cavity. Resuture was accomplished with difficulty, but the outcome was successful. However, complications arose: first, a subhepatic abscess, then a subdiaphragmatic abscess with pleurisy and empyema. After nine transfusions the patient recovered from these complications and was discharged. He gained 40 pounds (18.1 Kg.). He returned to the hospital over three months later with a right intralobar abscess, and on Sept 16, 1938, resection of 3 inches of the seventh rib was done.

CASE 2. A man who had had a resection for a marginal ulcer had a sharp abdominal pain during the third postoperative week while in the hospital. On exposure in an emergency operation duodenal dehiscence was found. The wound healed, with ultimate recovery.

In reviewing some of the work in gastric resection in a large hospital we are inclined to the belief that this condition is not so rare as we would like to think.

A factor in the etiology may be the backing up of the duodenal contents, which makes pressure to such a degree that the walls are forced apart in the early days of catgut absorption. Catgut at times absorbs earlier than desired on account of the intestinal chemistry, and, again, as the first author has maintained for years in discussing abdominal wound dehiscence, tissue hunger due to poor blood condition resulting from loss of food intake produces rapid absorption of the catgut. One cannot feel that carelesss or reckless apposition of the walls is practiced by the or tors,

MARGINAL ULCERS

One repair in the practice of a surgeon teaches the difficulties that surround him, to say nothing of the many risks of infecting the peritoneal cavity. The adhesions we prefer when doing a gastro-enterostomy at times require careful and tedious dissection before the jejunum can be separated from the stomach and the stomach from the omentum so that resection can be accomplished in healthy tissue.

The anastomotic hole in the jejunum must be closed or a resection done with anastomosis. When possible, the first author sews up the opening in the jejunum after trimming the edges from all the diseased structure. He then sews up the gap from side to side, never longitudinally. The new jejunogastric anastomosis is then made in a section of the jejunum 2 to 4 inches (5.08 to 10.16 cm.) distal to the suture line. In other instances, when a resection is called for, an end-to-end suture is made, again 2 to 4 inches distal to the anastomosis.

Before the operation we check the blood chemistry and the general blood pictures, with grouping for transfusions, etc., give parenterally fluids such as 3 per cent glucose in saline solution for clyses and 5 to 10 per cent for infusions, do gastric lavages to note the residue as to its make-up in the way of food contents, blood or pus, and have a careful analysis of the urine and a thorough examination of the chest made.

Immediately before the anesthesia we introduce a 16 or 18 F Levine tube (Wangensteen type preferably) into the stomach and anchor it on the face with adhesive tape.

We finish the operation by placing in all abdominal sutures to within ½ inch (1.27 cm.) of the terminal portion, where a rectal tube had previously been placed. After the peritoneum and fascia have been sutured we pour through this tube into the peritoneal cavity 500 to 1,500 cc. of saline solution, heated to about 105 or 110 F. The rectal tube is then removed and the abdomen closed with a final set of retention sutures. This treatment of the pertioneal cavity—the introduction of fluids—has been carried on by the first author over a period of ten years, and he feels that he has had excellent results and does not have to consider immediate infusions, clyses or transfusions. This treatment is also an excellent diuretic and aids in combating shock.

The silk retention sutures aid in preventing dehiscence of the abdominal wound. This condition of dehiscence has been in the surgical limelight for several years. Recently a discussion was presented before the surgical bodies of the New York Academy of Medicine, and each author believed that his argument was the solution. As has already been stated, the first author has taught for many years that the hunger of the tissues in these patients destroys the catgut in a short time. He has seen a double row of no. 2 chromic gut absorbed, in a gallbladder incision 6 inches (15.24 cm.) in length, within seventy hours, with only 3 inches (7.62 cm.) of a single strand left at the time of resuture. The hunger of the tissues is but a sidelight of the starved condition of the patient, whose blood shows a hemoglobin content below par and a red cell count far below normal.

He does not issue routine instructions subsequent to a gastric operation bearing on the parenteral fluids but he does instruct his assistants to give saline solution and tap water, equal parts of each, in doses of 6 ounces (177.4 cc.) every four hours per rectum. This injection or enema is given very slowly, five to ten minutes being required for its introduction. For some time he has been of the opinion that some of the cases of thrombus and embolus have been due to or assisted by the too liberal treatment by the staff, with either intravenous injections or clyses.

Fluids are given in his cases of resection within the first twelve hours; not less than 1 ounce (29.6 cc.) is tried, and this is rapidly increased to 2 or 4 ounces (59.1 or 118.3 cc.). We always watch for a turning of the head with expectoration of small amounts of fluid, indicative of gastric dilatation, and as soon as this occurs, fluids by mouth are stopped and a tube is inserted to observe the retention. Should there be retention, intake by mouth is stopped for six to eight hours and then tried again.

One death occurred from peritonitis due to a perforation and not the operation and the others from pneumonia and/or cardiac complications.

CONCLUSIONS

We do not operate for ulcers unless the patient has been under medical observation with a final statement that treatment has accomplished no satisfactory result.

We operate for repeated or recurring hemorrhages, evidence of obstruction or a perforation becoming imminent, and for acute perforations.

We operate for persistent pain and distress, particularly in cases of marginal ulcer.

We operate in all cases of marginal ulcer, as our experience has taught that this variety does not respond to treatment so often as it perforates. When perforation occurs, the occasion is more pernicious than in the case of duodenal ulcer perforation.

SUMMARY

The authors describe their experience in 89 cases of duodenal ulcer, marginal ulcer, gastric ulcer, or carcinoma or sarcoma of the stomach, in which resection was done. They used instruments consisting of crushing blades and clips for stapling, which they found advantageous for hemostasis and non-leaking closure, as well as time- and labor saving.

Silk retention sutures are preferred to catgut, as the latter may be absorbed too soon, owing to tissue hunger.

Introduction of fluids into the peritoneal cavity after gastric operations has been found to benefit.

122 East Seventieth Street.

RÉSUMÉ

La Gastrectomie

Les auteurs ont pratiqué la résection gastrique dans 89 cas de ulcère gastrique, ulcère duodénal, carcinome ou sarcome de l'estomac. Ils emploient les lames écrasantes et les agrafes et ainsi obtiennent une meilleure hémostase et une fermeture plus exacte. L'opération est effectuée en moins de temps et avec moins de difficultés. Ils préfèrent la soie au catgut, ce dernier parfois étant absorbé prématurement, les tissues ayant faim. L'introduction de fluides dans la cavité peritonéale est une mesure bienfaisante.

ZUSAMMENFASSUNG

Gastrektomie

Die Autoren beschreiben ihre Erfahrung in 89 Fällen von Duodenal-, Marginal- and Magengeschwüren, Magensarkom und -Carcinom, in denen Resektion vorgenommen worden war. Sie benutzten spezielle Pinzetten und Klammern, die sie als vorteilhaft für Blutstillung und nichtnachsickernden Verschluss, sowie zeit- und arbeitsparend befanden.

Seidenretentionsnahte wurden Catgut gegenüber vorgezogen, da letzteres zu bald absorbiert wird infolge des "Hungers" der Gewebe.

Die Verabfolgung von Flüssigkeiten in das Peritoneum nach Magenoperationen hat sich als vorteilhaft erwiesen.

SUMARIO

Gastrectomia

Los autores describen sus experiencias en 89 casos de úlcera duodenal, úlcera marginal, úlcera gástrica, carcinoma ó sarcoma del estómago, en los cuales se hizo resección. Ellos usaron instrumentos consistentes en ramas ó cuchillos de aplastamiento y puntos metálicos para suturas, los cuales encontraron muy ventajosos para hacer la hemostasia así como para evitar filtraciones; tambien se ahorró mucho tiempo. En los puntos de retención la seda fué preferida al catgut, pues esta última se absorbe muy rápido debido al hambre de los tejidos. La introducción de liquidos dentro de la cavidad peritoneal después de las operaciones gástricas se ha encontrado ser beneficiosa.

RIASSUNTO

Gastrectomia

Gli autori descrivono 89 casi di ulcera duodenale, marginale e gastrica, carcinoma e sarcoma dello stomaco, in cui la resezione fu eseguita. Essi usano strumenti che consistono di lame chiaccianti e punti metallici di sutura, ottenendo una migliore emostasi e una chiusura più esatta. Suture di seta sono preferibili al catgut, perche quest'ultimo può essere assorbito prematuramente. L'introduzione di fluidi nella cavita peritoneale dopo operazioni gastriche è assai vantaggiosa.

VISIT THE EXHIBITS, ROOSEVELT HOTEL

Hoffmann - La Roche Contributions

Will the gaunt spectre of dynamic ileus stalk through the convention meeting halls? Hoffmann-La Roche predict not, inasmuch as the feature of their exhibit at convention Booth 12 will be the latest and most efficacious agent for combating postoperative intestinal atony and atony of the urinary bladder: Prostigmin Methylsulfate, N.N.R. The Nutley firm will also exhibit other recent "Roche" contributions to materia medica proving particularly serviceable to surgeons.

Strasenburgh New Products

The R. J. Strasenburgh Company will demonstrate some unusual products in Booth 18 of the International College of Surgeons Assembly, technical exposition. Pryocawz is a medicated gauze especially adapted for wounds and abrasions. The Strasenburgh products consist of all types of standardized pharmaceuticals, also many specialties. Ask for a catalog.

Cameron Surgical Specialties

In Booth 14 of the International College of Surgeons exhibit hall the Cameron Surgical Specialty Company will show the new and inexpensive models of Cameron Cauterodyne (Radio Frequency), which provide safe and effective cutting, coagulation, desiccating and fulgurating with a quick-healing, bloodless field for all classes of surgery. Latest developments in electrically lighted lamps and instruments for all phases of surgery and diagnosis will also be demonstrated. See the new DeLuxe Rectal Diagnostoset.

Stainless Steel Instruments

Scanlan-Morris Company, of Madison, Wis., manufacturers of sterilizers, operating tables, surgical lights and surgical sutures, and the exclusive American agents for the A. B. Stille-Werner Company, of Stockholm, Sweden, will exhibit in Booth 48 of the International Assembly display genuine Stille stainless steel surgical instruments.

CYSTIC HYGROMA

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THE diagnosis of cystic hygroma is simple; it is the only brilliantly translucent swelling of the neck. On pathologic examination the swelling is found to consist of an aggregation of cysts like a mass of soap bubbles. The larger cysts are near the surface, while the smaller ones lie deeply and tend to infiltrate the muscle planes (fig. 1).

ETIOLOGY

A cystic hygroma has no connection with either the bronchial or the thyroglossal apparatus. The latter structures are epiblastic in origin and consequently have an epithelial lining. A cystic hygroma is lined by a single layer of endothelium having the appearance of mosaic, and is filled with a clear lymph. Obviously these findings suggest a derivation from the lymphatic system. By logical argument this theory can be strengthened. The neck contains relatively more lymphatic elements than any part of the body; next comes the axilla, and third the groin. Nine tenths of cystic hygromas are found in either the neck or the axilla, the neck easily occupying pride of place.

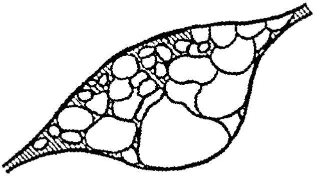

FIG. 1 Section through a cystic hygroma It is composed of an aggregation of thin-walled cysts, the larger lying nearer the surface

Up to this point one is on fairly certain ground—the condition is due to an aberration of the lymphatic system Whether the aberration is of the nature of a retention cyst or a benign neoplasm is speculative. The majority of observers incline to the former view, for the following reasons:

About the sixth week of embryonic life the primitive lymph sacs develop in mesoblast, the principal pair being situated in the neck between the jugular and subclavian veins (fig. 2); these correspond to the lymphatic hearts of amphibians. Failure of an important tributary of the primitive lymphatic system to link up with other lymphatic vessels or with the venous system would account for the appearance of these swellings.

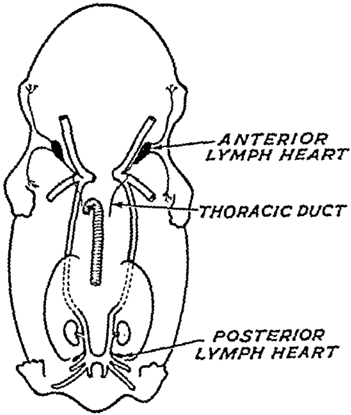

FIG. 2 The lymph hearts of an embryo pig (After Sabin, F.R.: The Origin and Development of the Lymphatic System)

CLINICAL FEATURES

Cystic hygromas usually appear during early infancy (fig. 3). Occasionally they are present at birth. I have a case in which both sides of the neck and both axillae were involved, so great a swelling being produced that labor was obstructed. A. E. Ellis cited an example of an infant born with an enormous hygroma. The child survived until the third day, its death being hastened by increasing dyspnea. Such examples are unusual. Typically a cystic hygroma occupies the lower third of the neck, and as it enlarges it passes upward toward the ear (fig. 4). It is situated immediately lateral to the carotid sheath and anterior to the cervical nerve roots, and often it extends down behind the clavicle, to lie on the dome of the pleura. As has been emphasized already, most hygromas are essentially multiocular. In a few cases the swelling enlarges visibly when the child cries, and it can be partially emptied by steady pressure—signs which indicate that the interior is not grossly subdivided into loculi.

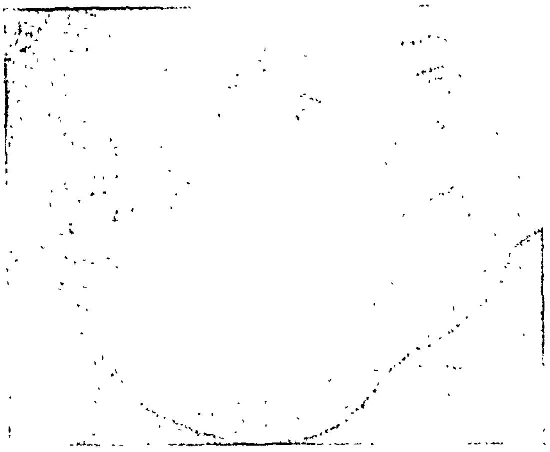

FIG. 3. Cystic hygroma in infancy.

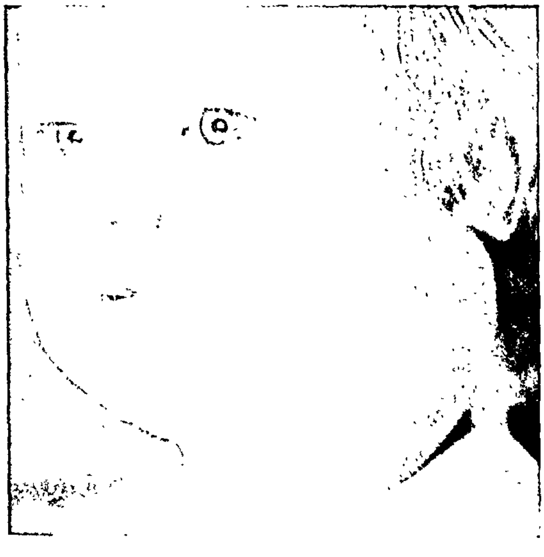

FIG. 4 Cystic hygroma which remained stationary in size for over a year.

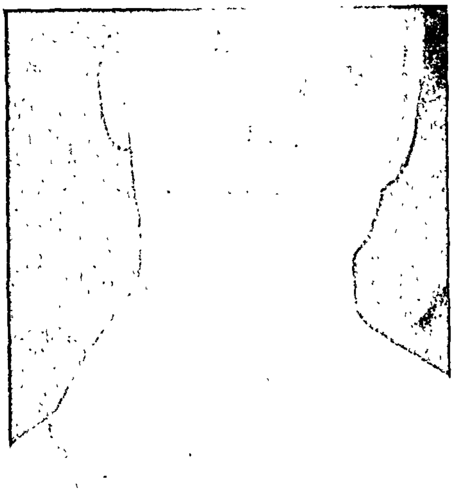

FIG. 5. Solitary lymph cyst.

FIG. 6. Cystic hygroma of the axilla.

The clinical behavior of a cystic hygroma is uncertain, so much so that it is impossible to prognosticate what will happen in a given case. Sometimes growth is rapid, as recorded by Prof. John Fraser, after which the cyst may burst subcutaneously and disappear within forty-eight hours. Several observers have noted that these cysts become the seat of recurrent inflammation, which often resolves without special treatment. In many cases the cyst continues to grow up to a certain point, and then appears to remain stationary. J. B. Murphy has been quoted as saying that cystic hygromas occasionally take on malignant characteristics, but if this is true it is exceptional. I have seen but 3 cystic hygromas in adults. Two were in the supraclavicular triangle (fig. 5), and one was in the axilla (fig. 6). In each of these cases the hygroma was mainly unilocular and could be emptied by pressure.

TREATMENT

Statistics show that the mortality among infants having a cystic hygroma is considerable. In a number of instances the fatal issue appears to have been aggravated by attempts at treatment. Of treatments not to be recommended, radium heads the list. Seven of twelve patients died of acute infection following insertion of radium needles into a hygroma. Aspiration serves no purpose, nor can injection be advised. True, Harrower had a successful issue following two injections of sodium morrhuate, but the swelling must have been one of the rare varieties of unilocular, or mainly unilocular, cysts. While I have had no personal experience of injection treatment in these cases, there is an exact parallel in certain testicular swellings. A thin-walled hydrocele of the tunica vaginalis often responds well to treatment by injection, but, as might be expected, in the case of multilocular cystic disease of the epididymis injection is painful and useless.

In early life inactivity is the best course. If the mass is rapidly increasing in size, spontaneous rupture can be awaited with some confidence. In cases in which the condition seems to be at a standstill, x-rays may be tried, but there is little evidence that any benefit accrues. When the child has reached the age of 2 years and is strong and healthy, clean, sharp dissection of the whole mass gives excellent results. In older children and adults, careful surgical removal of a cystic hygroma, whether in the neck or the axilla, is uniformly satisfactory.

SUMMARY

Cystic hygroma is the only brilliantly translucent swelling of the neck. It arises from failure of an important tributary of the primitive lymphatic system to link up with other lymphatic vessels or with the venous system. It usually appears early in life and typically occupies the lower third of the neck, extending upward as it enlarges. It is also found in the axilla. Most hygromas are multilocular. The clinical behavior is uncertain; in some cases spontaneous rupture occurs.

The mortality among infants is great and is often due to treatment. Radium is not to be recommended; aspiration is purposeless, and the benefits of injection and x-rays are questionable. In persons 2 years of age or older, surgical removal gives satisfactory results.

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RÉSUMÉ

L'Hygroma Cystique

L'hygroma cystique est le [illegible] flement du cou qui soit trans[illegible] résulte du manque d'ab[illegible] branche importante du sys[illegible]

tique avec d'autres vaisseaux lymphatiques ou avec le système veineux. Généralement il se manifeste en bas âge et siège au tiers inférieur du cou, et en grossissant envahit les parties moyennes et superieures du cou. On le rencontre aussi dans l'aisselle. La plupart des hygromas sont multiloculaires. Dans certains cas la rupture spontanée survient. La mortalité chez les enfants est grande; souvent elle résulte du traitement. Le radium n'est pas recommandable; l'aspiration ne donne pas de résultats permanents. Les injections et les rayons X donnent des résultats douteux. Chez les malades au-dessus de deux ans l'ablation chirurgicale donne des résultats satisfaisants.

ZUSAMMENFASSUNG

Zystisches Hygrom

Zystisches Hygrom ist die einzige klar-lichtdurchlässige Schwellung am Hals. Es entsteht dadurch, dass ein bedeutender Anteil des primitiven Lymphsystems nicht zur Verbindung mit den anderen Lymphgefässen oder mit dem Venensystem kommt. Es erscheint gewöhnlich sehr zeitig und findet nich typisch am unteren Halsdritte; wenn es sich vergrössert, zeigt es eine Tendenz zur Entwicklung nach aufwärts. Auch in der Achselhöhle ist es anzutreffen. Die Mehrzahl der Hygrome ist multilokulär. Ihr klinisches Verhalten ist unbestimmt; in einzelnen Fällen erfolg Spontanruptur.

Die infantile Mortalität ist gross und häufig eine Folge der Behandlung. Radium ist nicht zu empfehlen. Punktion ist zwecklos und die Vorteile einer Injektionsbehandlung oder von Röntgenbestrahlung sind zweifelhaft. In Kindern von 2 Jahren ab bringt die chirurgische Entfernung befriedigende Resultate.

SUMARIO

Higroma cístico

Higroma cístico es la única inflamación brillante y translucente del cuello. Este se presenta cuando un tributario del sistema linfático primitivo no se conecta con otros vasos linfáticos ó con el sistema venoso. Generalmente aparece temprano en la vida y ocupa tipicamente el tercio mas bajo del cuello, extendiendose hácia arriba al crecer. Puede ser encontrado tambien en la axila. La mayoria de los higromas son multiloculares. La manera que actuan clinicamente es indeterminada; en muchos casos rupturas espontáneas occuren.

La mortalidád entre los niños es grande y amenudo debida al tratamiento. El radio no se debe de recomendar; la aspiración no es indicada, y los beneficios de inyecciones y rayos-x son dudosos. En personas de dos anos de edad ó majores extirpación quirúrgica da resultados satisfactorios.

RIASSUNTO

Igroma cistico

L'igroma cistico è l'unica tumefazione del collo, che è brillantemente translucente. Si sviluppa della mancata anastomosi di un tronco limfatico primitivo con la rete limfatica o con il sistema venoso. Si manifesta nella prima infanzia e tipicamente occupa il terzo inferiore del collo, estendendosi in alto con l'aumento di volume. Si riscontra qualche volta nella regione ascellare. In maggioranza, questi igromi cistici sono multiloculari. Il corso clinico è incerto; in alcuni casi avviene la rottura spontanea.

La mortalità nell'infanzia è alta, e spesso dovuta al trattamento. Il radio non è consigliabile, l'aspirazione non è indicata e dubbi sono i benefici di iniezioni o della Roentgenterapia. In pazienti da due anni in su l'estirpazione chirurgica da risultati soddisfacenti.

PROSTATIC HYPERTROPHY

PATHOLOGIC BASIS FOR TREATMENT*

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BENIGN prostatic hypertrophy is entirely harmless except as it causes urinary obstruction. Its treatment is therefore treatment of the urinary obstruction. The obstruction is a mechanical affair, due to encroachment on the urethral lumen by masses of hypertrophic tissue. Removal of this tissue constitutes a radically curative procedure. In the past it has been believed that surgical removal was the only effective method. It is indeed a very effective method, thanks to the fact that the enlargement develops in the most central portion of the prostate. After the hypertrophic masses have been removed, the remaining peripheral portions of the prostate are able to shrink down and may become again a practically normal prostate gland. If the removal of the hypertrophied tissue is complete, the procedure does two important things: first, it completely relieves the urinary obstruction, and, second, it practically eliminates the chance of recurrence.

Of late years prostatectomy, which is the not quite correct name for the manual enucleation of the hypertrophied portions of the prostate, has been challenged by two other methods. The first is the so-called transurethral resection, in which the hypertrophied masses are removed piecemeal through a urethral instrument; the second contemplates the shrinkage and atrophy of the hypertrophied masses as the result of the giving of some biologic product designed to reverse the process of hypertrophy which has brought about the disease.

TRANSURETHRAL RESECTION

I shall discuss first transurethral resection. All the instruments used in this procedure necessarily suffer from the same limitation. The urethra is fixed at the point where it passes through the urogenital diaphragm or triangular ligament, and for this reason the instrument can move only in a restricted zone, and can remove tissue only from a region roughly the shape of an inverted cone the apex of which is at or near the verumontanum. In some cases of prostatic enlargement, practically all the tissue to be removed lies within this cone, as diagrammatically illustrated in figure 1*A*, and resection in such a case is entirely satisfactory.

In a prostate no greater in size, as shown in figure 1*B*, the arrangement of the hypertrophied tissue may be quite different, so that much of it falls outside the cone-shaped area. This is true if the growth is extravesical and extraurethral, so that it bulges laterally and into the rectum. If the prostate is very large, the situation may be as represented diagrammatically in figure 1*C* and *D*. The line *S* represents the safe cutting zone, while the line *D* shows how one may run into danger if one extends the cutting too far in an effort to remove more tissue. The arrow indicates the angle between the prostate and bladder, where it is easiest to cut through the capsule into the periprostatic space.

With these diagrams in mind, let us look at some drawings of actual prostatic specimens to see how infinite is the variety in shape and size.

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* Read at the Second Annual Assembly of the United States Chapter of the International College of Surgeons, Philadelphia, Oct 14, 1938

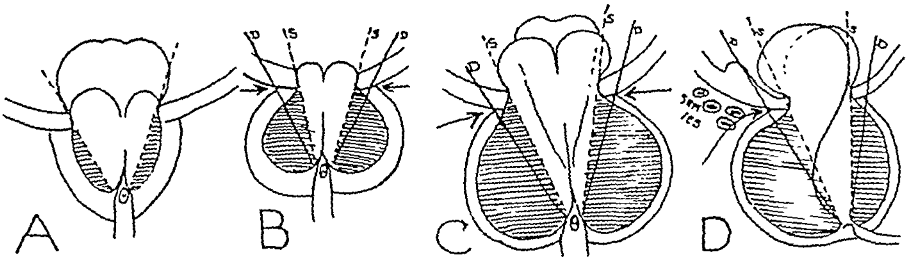

FIG. 1 *A*, diagram of a moderate-sized prostatic enlargement, mostly intravesical, and suitable for resection The dotted lines show the "cutting cone." *B*, diagram of a prostatic enlargement about the same size as that in *A*, but mostly extravesical. Note how much falls outside the cutting cone. *S* shows a safe cutting zone; if cutting is continued to the danger line *D*, extravasation results. *C*, diagram of a very large prostatic enlargement. Note that nearly two thirds of the hypertrophied tissue falls outside the cutting cone. *D*, diagram of the same prostate as in *C*, in sagittal section. Note the large projection in the direction of the rectum and the danger point in the region of the seminal vesicles.

Figure 2*A*, from Randall's book on the pathology of the enlarged prostate, shows what he called posterior commissural hypertrophy. This mass has a pearlike shape which should lend itself readily to resection. Figure 2*B*, however, from the same source, shows a marked extravesical enlargement which would be difficult to remove completely by that method.

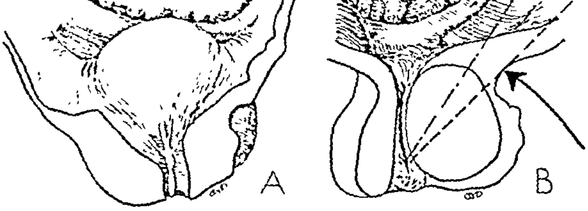

FIG. 2. *A*, posterior commissural prostatic hypertrophy. *B*, wholly extravesical prostatic hypertrophy. The safe cutting line leaves much tissue behind; the arrow points to the region where extravasation is to be feared. (Redrawn from Randall.)

Tandler and Zuckerkandl, in their excellent book on the pathology of the enlarged prostate, presented a number of sagittal sections which are most instructive. Figure 3*A*, an exterior view of the prostate and bladder, shows again the angle of danger between these, as indicated by the arrow. Figure 3*B* shows a small prostate, largely intravesical. The enlargement could be re- would be needed to prevent an extravasation at the point indicated by the arrow. In figure 3*C*, much of the enlargement falls outside the cutting cone, and the arrow points again to the danger spot. Figure 3*D* demonstrates how, even in a large prostate, most of the hypertrophic tissue may lie within the cutting cone. In figure 3*E* the condition is somewhat similar. In this specimen the hypertrophied portion has been removed after fixation, showing what a cavity it excavates in the prostate. In figure 3*F* the posterior or median part of the enlargement falls easily in the cutting cone; anteriorly there is a good-sized mass, which might be called anterior commissural hypertrophy, which would be hard to reach with the resector. Extravasation could also be caused in this region. In the gland shown in figure 3*G*, the greatest difficulties would again lie anteriorly, although complete removal posteriorly would bring one very near to the seminal vesicles. Figure 3*H* shows an extremely large gland. The difficulty of complete removal here is obvious. Figure 4 shows a carcinomatous prostate taken from Wallace's study of prostatic enlargement. The manner of growth of carcinoma lends itself more readily to a simple tunnelling procedure. Figure 5 shows a hypertrophic mass weighed 155 Gm. after 44 Gm. had been cut away from it by resection. Large size alone of the hypertrophied mass may be a serious objection to resection. In the masses of smaller size, it is the conformation of the growth which is most important. This must be studied by observation through all types of cystoscopic lenses, particularly the foroblique and the retrograde, and by the most thorough palpation, with and without instruments in the urethra. Unless one wishes to perform resection indiscriminately on all enlarged pros-

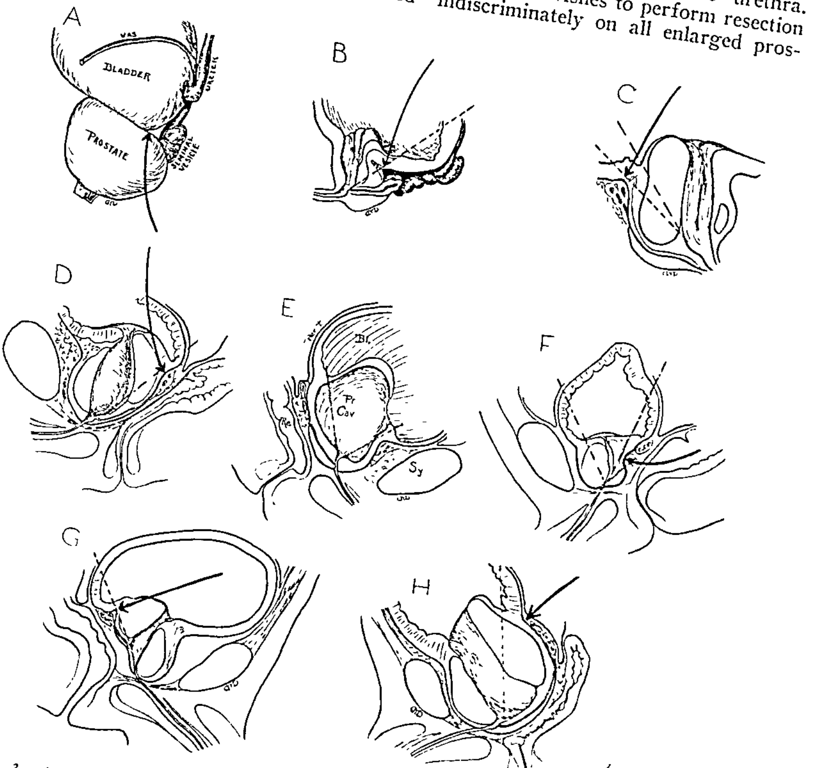

FIG 3 *A*, exterior view of enlarged prostate, bladder, etc The arrow points to the danger zone *B*, small prostatic enlargement. *C*, large extravesical prostatic enlargement, which has also greatly dilated the internal sphincter Much tissue lies outside the safe cutting zone *D*, large prostatic enlargement. The shape here is such that most of the tissue lies within the safe cutting cone *E*, prostate similar to that in *D* The hypertrophied mass has been removed post mortem, showing the cavity left behind *F*, moderate-sized prostatic enlargement The anterior portions are comparatively inaccessible to the resector *G*, fairly large prostatic enlargement. The arrow points to the danger region near the seminal vesicles *H*, extremely large prostatic enlargement. Note that the prostate has grown up in front of the seminal vesicles, so that they lie posterior to it instead of above it Note how far outside the cutting cone much of the tissue lies (Redrawn from Tandler and Zuckerkandl)

tates, it is better to attempt to select, according to definite pathologic principles, the ones most likely to permit complete or almost complete removal of the hypertrophied tissue, and treat the others by prostatectomy. If removal is incomplete, the clinical result is apt to be poor, and the chance of recurrence is increased.

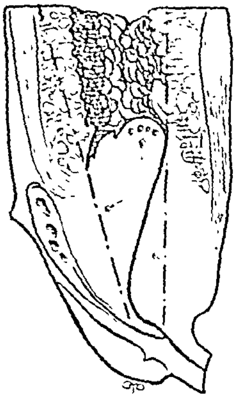

Fig. 4 Carcinomatous enlargement of the prostate. Carcinoma uncomplicated by benign hypertrophy lends itself well to resection, having less tendency to bulge extravesically. (Redrawn from Wallace.)

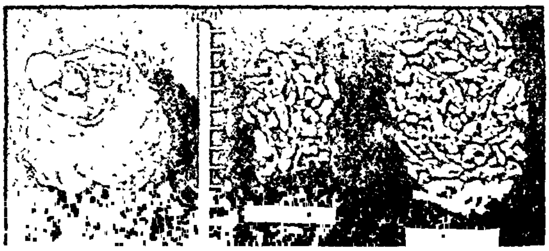

Fig. 5. Photograph of a hypertrophied mass, weighing 155 Gm., removed by suprapubic prostatectomy. At the left is shown 44 Gm. of tissue removed by resection from the same prostate a few months previously. The immediate clinical result of resection was good.

HORMONAL TREATMENT

In regard to the proposal to shrink the enlarged mass by hormonal treatment, I do not wish to discuss the underlying theory at great length. Most of this theory has been built on observations of hypertrophies and atrophies experimentally produced in the genitalia of animals. These hypertrophies involve all parts of a number of organs; e. g., in the rat the penis, the prostate, the coagulating gland, the seminal vesicles and the epididymis. In the disease in man, only the central portion of the prostate hypertrophies, the rest of the genitalia remaining unchanged or undergoing some atrophy. There is, therefore, much doubt that the two conditions are analogous.

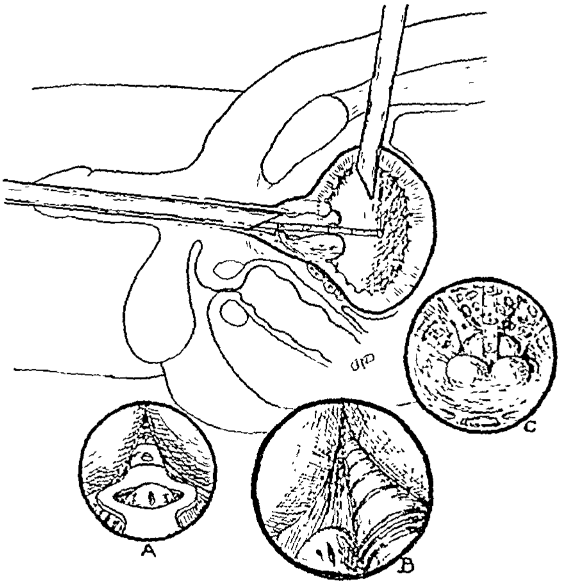

Fig. 6. Diagram illustrating Davis' method of measuring accurately the size of the enlarged prostate. Two panendoscopes are used, one inserted through the urethra, the other through the suprapubic fistula, and a calibrated sound is introduced through the former into the bladder. *A*, panendoscopic view showing a special sound with a fenestra to go over the verumontanum. *B*, view showing how an ordinary graduated urethral catheter can be used, a certain graduation being placed opposite the verumontanum. *C*, view through the upper panendoscope, showing how the length of the prostate may be read off.

At any rate, it is a serious error to judge the effects of hormonal treatment by changes in the symptoms. The symptoms of prostatic hypertrophy are extremely variable. The hypertrophied masses undergo constant changes in size, due to variations in the amount of secretion in the ducts and acini, and particularly to the degree of vascular congestion and edema present. A reduction in congestion may bring about a truly dramatic improvement in symptoms, but this is very different from a real regression in the hypertrophy of a sort which might lead to ultimate complete cure.

I myself have no evidence to present for or against the hormonal treatment. I do insist that claims made for it should be based on sound pathologic observations. To aid in this, I suggest a method of study which would meet this requirement.

MEASUREMENT OF PROSTATE

The only sure and permanent way to abolish congestion in the enlarged prostate is to establish suprapubic drainage, and this must be done before beginning measurements. A month later, the gland having become quiescent, its length from the verumontanum to the tip of the median lobe should be measured by inserting, under vision with a panendoscope, a measuring rod which would pass well into the bladder. The first calibration is placed and held exactly opposite the verumontanum, and the point at which it emerges from the prostatic urethra can be observed through a second panendoscope inserted through the suprapubic fistula. This is shown in figure 6. This would give an absolutely accurate and objective measurement of the length of the prostate.

Then, and only then, should the hormonal treatment be begun. If, after hormonal treatment, there could be observed a definite diminution of the length of the prostate, great enough to rule out experimental error, there could no longer be any doubt that actual regression had been produced. If no such diminution occurred, it would perhaps save one from further pursuit of a will o' the wisp.

SUMMARY

In addition to prostatectomy, two other methods of treating prostatic hypertrophy are discussed: transurethral resection and hormonal treatment. The applicability of transurethral resection depends on the region, size and shape of the hypertrophied tissue. The author describes an objective method for the exact determination of any regression in the size of the enlarged prostate.

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RÉSUMÉ

Traitement de l'hypertrophie de la prostate

L'auteur décrit en plus de la prostatectomie deux autres méthodes qui sont employées dans le traitement de l'hypertrophie de la prostate: la résection transuréthrale et le traitement hormonal. La resection trans-uréthrale est determinée par le siège, le volume et la forme du tissu hypertrophié. Le drainage suprapubique peut, d'après l'auteur, décongestionner la prostate après l'emploi de la thérapie hormonale.

ZUSAMMENFASSUNG

Zur Behandlung der Prostatahypertrophie

Neben der Prostatektomie sind zwei andere Behandlungsmethoden der Prostatahypertrophie beschrieben: die transurethrale Resektion und die hormonale Behandlung. Die Resektionsmethode hängt von Lage, Grosse und Form der vergrösserten Gewebe ab. Der Autor glaubt, dass suprapubic Drainierung dazu dienen kann, die Stauungserscheinungen in der vergrösserten Prostata unter gleichzeitiger hormonaler Behandlung zu beseitigen.

SUMARIO

Tratamiento de la hipertrofia prostática

Además de la prostatectomia, otros dos métodos de tratamiente de la hipertrofia prostática son discutidos: Resección transuretral y tratamiento hormónico. La aplicación del método de resección transuretral depende de la región, tamaño y forma del tejido hipertrofiado. El autor describe un método objetive para la determinación exacta de alguna recurrencia en el tamaño de la prostata hipertrofiada.

RIASSUNTO

Terapia dell'ipertrofia prostatica

Oltre alla prostatectomia, due altri metodi di terapia dell'ipertrofia prostatica sono discussi: la resezione transuretrale e la terapia ormonale. L'applicabilità della resezione transuretrale dipende dalla sede, volume e forma del tessuto ipertrofico. L'autore descrive un metodo obiettivo per la determinazione esatta di qualsiasi diminuzione di volume della prostata ipertrofica.

* * *

VISIT THE EXHIBITS, ROOSEVELT HOTEL

Interesting Motion Pictures

At the combined International Assembly exhibit of the Anglo-French Drug Company and E. Fougera & Company, Inc. (Booths 39 to 45 and 46 and 47), motion pictures prepared in collaboration with outstanding surgeons will be shown, depicting the following: radical breast amputation, subtotal thyroidectomy, cholecystectomy, incarcerated femoral hernia, resection of splenic flexure of colon for carcinoma in one stage, uterine prolapse, retroversion of uterus, massive carcinoma of breast, massive incarcerated umbilical hernia (above films by Dr. Harry Koster), technic of spinal anethesia (Dr. Benjamin I. Golden), uterosalpingography (Dr. Julius Jarcho), sterilization by means of cautery (Dr. Mortimer N. Hyams), upper respiratory tract (sound pictures in four reels; Dr. James S. Edlin, Dr. S. A. Thompson, Dr. Raphael Schillinger, Dr. A. Q. Penta). Many original technical steps are shown, and their exposition will be of benefit to all those viewing this unique exhibit. All surgeons attending the meeting are cordially invited.

Sutures for Every Purpose

Davis & Geck, Inc., will display in Booths 33, 34 and 35 of the convention hall their complete line of sterile sutures, which includes a wide variety of interesting products especially designed for various situations in accident and emergency work as well as in general surgery and the specialties. A further feature of the exhibit will be motion pictures in full color showing various operative procedures and demonstrating the technic of many eminent surgeons.

* * *

Bard-Parker Display

Among the Bard-Parker products to be exhibited at Booth 10 of the International College of Surgeons convention hall are Rib-Back Blades, Renewable Edge Stainless Steel Scissors, Lahey Lock Forceps, Formaldehyde Germicide and Containers for rust-proof sterilization of surgical instruments, and a Hematological Case for obtaining blood samples at the bedside.

CONGENITAL ATROPHY OF THE ULNA

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ANOMALIES in the development of the limbs are, in most cases, simple arrests or deviations of the process of evolution. The limbs appear on the two sides of the trunk about the end of the third week or at the beginning of the fourth, when the intestinal canal is closed and the evolution of the crest very advanced.

The ulna has four centers of ossification, one primary and three secondary or complementary. The primary center appears from the thirty-fifth to the fortieth day before birth and is contemporaneous with the primary center of ossification of the radius, tibia and fibula. From the primary center there develops, independently of the body of the bone, a great part of the two ends, in the lower end the upper half of the cubital head, in the upper end the coronoid process and the two lower thirds of the olecranon. Of the secondary centers, the lower apophysis appears from the sixth to the ninth year; the styloid apophysis and the lower lining of the head form from this. The upper apophysis appears from the fourteenth to the eighteenth year and forms the upper part of the olecranon; this is also a point of the olecranon (Andrieu). A special point has been described for the apex of this apophysis (Sappey).

Ossification begins in the lower end. The ends become joined to the body of the bone from the fifteenth to the twentieth year—the upper at 15 to 16 years and the lower after 18.

The congenital anomalies or malformations of the skeleton of the limbs due to osteogenic disturbances the causes of which are not known occur as the result of the following: 1. Disturbances of evolution of the skeleton (*a*, abortion or ectromelia; *b*, hypertrophy). 2. Disturbances of segmentation (*a*, abnormal fusion of segments; *b*, exaggerated segmentations). 3. Axial deviations. 4. Additional aberrant heteroplastic nuclei; osteogenic exostoses.

In this paper I shall not discuss the rather complex pathogenesis of congenital malformations, which is unknown in the majority of cases. I shall mention only the attempted explanations offered for them by the three well known theories: (1) arrest of embryonic development (Potel), (2) amniotic compressions and (3) malpositions or disturbances in the rotation of limbs (Meckel, Geoffrey Saint-Hilaire, Diffenbach, Jeanneney, etc.).

A limb is schematically composed of (*a*) a rhizomelic proximal segment joined to the body (humerus, femur); (*b*) a median or intermediate segment, consisting of two united bones (radius and ulna, tibia and fibula); (*c*) an acromelic terminal distal segment (hands and fingers, foot and toes)

The ectromelias may be classified as follows: 1. Abortion of all the segments (ectromelia proper, or total ectromelia); this is rarely unilateral. 2. Abortion of the rhizomelic segment or of that and of the intermediate segment (focomelia). 3. Abortion of the acromelic segment (hemimelia); this may be total or partial.

Besides these transverse ectromelias, there are cases of longitudinal ectromelia (fig. 1), in which the abortion affects the intermediate bones (radius ulna, tibia, fibula), the acromelic segment being preserved in its totality partially disappearing spontaneously (Raboud and Hovelacque[20a]). This constitutes segmental longitudinal atrophy, which is the result of an osteogenic disturbance in which one of the bones evolves normally while the other aborts or develops incompletely. In the case of the forearm, the subject of this study, the ulna may be lacking (*a*) partially, (*b*) totally, (*c*) totally or partially, affecting the internal portion of the carpus and of the hand (partial disappearance of the acromelic segment).

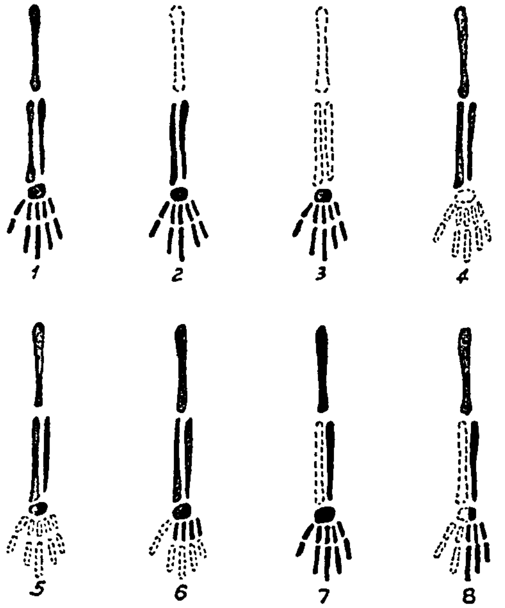

FIG. 1. Schema showing varieties of ectromelia (after Potel).

Total absence of the ulna was considered exceptional by Maisonnet;[16] Testut[22] and others have stated that it is a rather frequent anomaly. It occurs especially in males, less often, however, than total absence of the radius, and it is sometimes bilateral. It causes the same disturbances as those due to partial absence of the ulna.

When the ulna and a part of the hand are lacking, there is disappearance of the internal portion of the carpus (the pyramidal, the pisiform and the unciform bone) and of the middle, ring and little fingers or of the ring and little fingers.

When the ulna is partially absent or when it is insufficiently developed, one observes the following: 1. Ulnar clubhand, the hand being flexed downward and inward. 2. Inward deviation of the radius; this bone is of normal length, and the normal relations of the proximal radial end are preserved; the deviation occurs inward, outward or in the form of an italic S. 3. Changes in the radial head. This may be flattened on the humeral condyle, surround it and be luxated forward, backward or outward, determining anatomic changes in the condyle. Or it may penetrate the condyle and fuse with it, producing humeroradial ankylosis.

Partial absence of the ulna generally becomes manifest at about the age of 10 or 12 years, a period when functional disturbances due to the unequal development of the two bones become evident. One notes progressive limitation of movements of flexion and extension, pronation and supination. The shortening of the forearm is established; this shortening may progress to 6 or 8 cm. Sometimes functional adaptation occurs.

ANATOMY AND PATHOLOGY

The bones are subject to defects of conformation which may be congenital or accidental. Congenital defects of conformation are frequent in the vertex of the cranium, less frequent in the thoracic and abdominal walls and rare in the limbs. In the bones they consist in lack or excess of development of the affected osseous parts, and often there are associated congenital anomalies of the neighboring viscera.

The defects of conformation following development of bone often are due to a hypertrophy or an accidental atrophy, such as one observes also in several chronic diseases. Defects of conformation in the bones of the limbs are rare. However, the perfectly defined observations of tèratologists, anatomists, pathologists and clinicians have aided, as is the case in all scientific acquisitions, in presenting classifications based on verified facts or on considerations derived from the study of these.

It is accepted that certain defects of conformation are relatively frequent, others less frequent and some rare. On the basis of theoretical study compared with observed facts or on that of deduction as to probable or possible pathogenesis, one can speak of defects which are scientifically acceptable but which may not have been observed, though they may have occurred.

In regard to the ulna, writers have reported that this is sometimes absent, and it has been stated that absence of this bone is a rather frequent anomaly. However, in contrast to the relative frequency of total absence of the bone, it has been reported that congenital atrophy of the ulna is rare. I have compiled from numerous works on anatomy and surgical pathology and from reports in the literature a short bibliography, which is an important source of the facts cited by me. A few of these reports may be reviewed here.

Pircard[19] mentioned a case of almost complete absence of the right ulna. Rosenmüller observed a case in which the olecranon was entirely separated from the ulna, forming a sort of small patella on the posterior surface of the elbow. Deville[8] verified in the cadaver of an elderly man absence of the greater part of the diaphysis of the right ulna, luxation of the upper end of the radius and congenital fractures and luxations.

Demarquay[7] cited a case in which most of the ulna was absent, only the lower epiphysis and all the upper epiphysis remaining, joined to a fragment 5 or 6 cm. long of the length of the diaphysis; between these ends about two-thirds of the ulna was missing, being replaced by a large fibrous band, serving as insertion to the interosseous ligament and all the muscles which are normally attached on this part of the bone. Velpeau[24] cited a case similar to the preceding, probably the same. Blandin[4] observed an ulna which did not reach to the articulation of the elbow.

Maisonnet[16] in his contribution on the surgical pathology of the limbs furnished no bibliography but reproduced some illustrations of Testut and other authors. He discussed from a theoretical point of view partial absence and underdevelopment of the ulna, stating that often the bone conserves its general form but is much shorter than the radius, and that in some cases only the lowermost portion may be missing, in which event the ulna is joined to the radius by a very narrow osseous ligament or by true bony fusion. Testut[22] mentioned that congenital radio-ulnar fusion has been observed rather frequently, but he reported no case of associated ulnar atrophy.

In regard to the nosologic entity of atrophy of the lower portion of the ulna, Maisonnet[16] undoubtedly discussed this subject theoretically, in order to make complete the developmental plan of his work on surgical pathology already referred to, as this work contains no bibliography, no references and no other information as to sources (I have already stated that one can speak of malformations scientifically acceptable but which possibly have never been observed).

In the case of congenital atrophy of the ulna which I report here, the bone did not reach to the articulation of the wrist (articulation of the hand, or radiocarpal articulation). This observation is diametrically opposed to that of Blandin (1837).[4] In view of what has already been said, until proof to the contrary is published one may classify these two original observations as follows: (1) congenital atrophy of the proximal portion of the ulna (Blandin, 1837) and (2) congenital atrophy of the distal portion of the ulna (Manzanilla, 1938).

REPORT OF CASE

I. M., an unmarried girl aged 16, gave a history which suggested hereditary syphilis, but there was nothing significant in the immediate family history. She complained of functional weakness of the right arm, which she had observed since the age of 9 years and which had grown progressively worse.

Physical examination revealed facial asymetry, the left side of the face being less developed than the right, affecting the vault of the palate. The tongue had slight furrows. There was hypertrophy of the thyroid, which was not important, the condition being a colloid, nontoxic goiter (Hertzler), a nontoxic adenoma (Plummer). The mental condition was normal.

The right upper extremity was shortened 3 cm. in its total length, 2 cm. of this shortening applying to the forearm, and 1 cm. to the hand, which in addition was 0.5 cm. narrower than the left hand. Orientation of the axis of the right forearm in relation to that of the left was slightly downward and inward, and that of the right hand in relation to the right arm showed a corresponding deviation (ulnar clubhand). The circumference of the middle portion of the third part of the left forearm was 0.5 cm. greater than the corresponding measurement on the right. Flexion and extension were normal as regards the articula- of the elbow, but limited as regards that of the wrist (articulation of the hand, or radioulnar articulation).

Serum reactions were negative for syphilis.

During one year this patient received, in her home, intensive treatment with calcium, supplemented with epinephrine.

ROENTGENOGRAPHIC FINDINGS

Figure 2*A* illustrates the change of form and structure in the two bones of the forearm, showing absence of carpal apposition of the lower end of the ulna. This bone presents a marked difference in diameter in the area of union of the middle and upper thirds as compared with that of the lower third. One sees faintly outlined in the free end the styloid process or apophysis, which appears separated from the rest of the bone by a joining cartilage. In addition, the compact internal blade of the ulna arouses curiosity, being greatly thinned in that portion which corresponds to the greatest diameter of the bone, presenting in this area two kinds of cavities, especially a lower one close to the interosseous space. These cavities and a link of tissue of compact appearance, which traverses the ulna obliquely, give the impression of bone cysts. However, if one takes into consideration the other notable changes in the skeleton, one can state that these are not bone cysts or centers of changes of the medullary tissues of the bone, not very rare in cases of bony atrophy. On the other hand, the skeleton presents no alteration in the longitudinal dimensions in cases of fibrous cystic osteitis, Recklinghausen's disease.

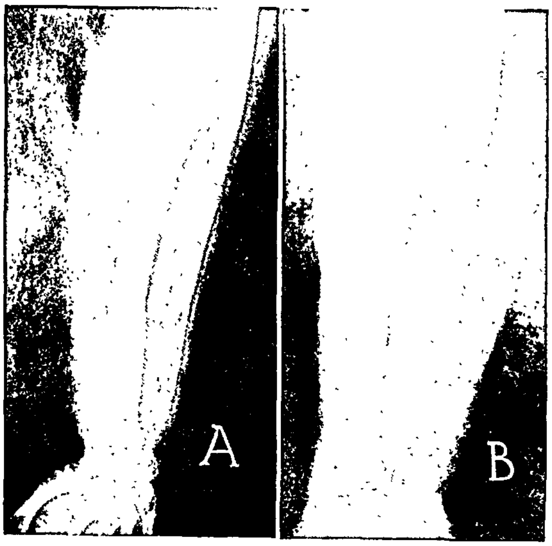

Fig. 2. *A*, roentgenogram showing changes of form and structure in the two bones of the forearm in the author's case. *B*, appearance of the same bones after intensive treatment for one year with calcium, supplemented with epinephrine.

One can say that the ulna presented changes in its distal end which made it permissible to classify as porosic hyperostosis the difference in density of the lower end just mentioned, which can be attributed to monotopic centers in the metaphysis.

The radius shows a double inflection in the form of an italic S, but in addition it must be taken into account that the diameter of the upper portion is less than that of the middle and lower thirds. The axis of the hand is slightly deviated toward the ulna (ulnar clubhand).

It is evident that this is a case of congenital atrophy of the distal portion of the ulna, rare among the anomalies due to lack of development of the bones of the forearm, according to several authors; one can neither prove nor disprove roentgenologically the possibility that this disturbance or alteration in the ulnar development is of syphilitic, dysendocrinic, etc., origin.

Though the roentgenogram shown in figure *2B* is not rich in details of bone structure, it serves sufficiently to permit one to evaluate the disappearance of the cavities *of the lower end of the ulna,* a change verified after the intensive treatment with calcium, supplemented with epinephrine, which was carried out for a year. The calcium therapy, as has already been stated, has not influenced possible longitudinal growth of the bone.

THERAPY

The intensive treatment with calcium, supplemented with epinephrine, has succeeded in modifying only the zone of rarefaction in the lower third of the ulna (fig. *2A*). Roentgenologically and at first sight, this rarefaction could be erroneously interpreted, its morphologic features and characteristics and the age of the patient being considered, as solitary cyst *of* the bone, or fibrous cystic osteitis, the most frequent form of fibrous osteodystrophy. However, the evident congenital atrophy of the distal portion of the ulna and the singularity of the fibrous osteodystrophy localized in the bony segment in this case (regional fibrous osteodystrophy), as well as the indisputable effect of the calcium, *lead one to reject the interpretation* mentioned and make tests of the blood calcium content superfluous. Even though the calcification of the rarefied zone is evident (fig. *2B*), the calcium therapy had no effect whatever on possible longitudinal growth of the bone. Finally, if one considers the therapeutic failure as regards the osseous atrophy, the age of the patient and the well known facts concerning ossification of the distal end of the ulna, medical therapy should be rejected, in my opinion.

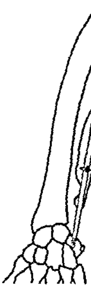

Fig 3 Drawing showing operative plan of the author.

I am firmly convinced that this case belongs in the surgical category. Unfortunately, the patient and her family have refused radical treatment.

The surgical plan that I had sketched and which I hope to carry out when the patient and her family have become convinced of its necessity is as follows:

1. Making an incision after the manner of Albee, on the dorsal surface of the atrophic ulna, extending this onto the lower third.
2. Making a small incision, a continuation of that of the ulna, on the dorsal surface of the pyramidal bone.
3. Obtaining a longitudinal bone fragment, after the manner of Albee, from the lateral or external surface of the tibia.
4. Fixation of the tibial fragment into the incision of the ulna and the pyramidal bone (fig. 3).

The creation of this graft [illegible] modify the deviation of the [illegible] would more or less correct the ulnar clubhand. I do not doubt that the amplitude of movements would improve sufficiently to bring about a certain degree of functional adaptation.

I do not consider concomitant osteotomy of the radius necessary; it is logical that the shortening already mentioned would remain.

As an auxiliary measure one could use calcium therapy, giving such calcium fixatives as deemed desirable (epinephrine, parathyroid, vitamin D, ultraviolet radiation).

SUMMARY

A case of congenital atrophy of the distal portion of the ulna is reported; up to the time of writing, this is the first known observation of this condition.

Blandin reported in 1837 a case of congenital atrophy of the proximal portion of the ulna.

The author reviews the subject of congenital anomalies or malformations of the limbs, due to osteogenic disturbances of unknown cause, and adds some organogenic, anatomic and pathologic considerations. The clinical features of his case are presented and the operative plan proposed by him is outlined.

I wish to thank the radiologist Dr. Samuel Ruiz Cornejo for his interpretation of the roentgenograms

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RÉSUMÉ

Atrophie congénitale cubitale distale

On a donné à connaître un cas d'atrophie congénitale cubitale distale; on considère que jusqu'au moment où il soit présenté une preuve documentée du contraire, il s'agit de la première observation de son genre. Blandin fit connaître en 1837 une malformation congénitale de type diamétralement opposé, atrophie congénitale cubitale proximale.

L'auteur consigne des renseignements sur cette classe d'anomalies ou malformations congenitales des membres, dérivées de troubles osteogéniques dont nous ignorons la cause; il y ajoute des considérations organogéniques,

anatomiques et pathologiques sur le sujet. Une relation des faits cliniques sur le cas est présentée et l'on expose le critérium thérapeutique, indiquant également le traitement chirurgical d'accord avec un plan opératoire proposé par l'auteur.

ZUSAMMENFASSUNG

Kongenitale Atrophie des distalen Endes der Ulna

Ein Fall von angeborener Atrophie des distalen Ulna-Anteils wird beschrieben; der Bericht ist die erste bekannte Beobachtung dieser Art von Missbildung bis zum Zeitpunkt der Veröffentlichung. Blandin berichtete in 1837 über einen Fall, der die entgegengesetzte Missbildung aufwies, nämlich Atrophie des proximalen Ulna-Endes. Der Verfasser gibt eine Uebersicht über die Kenntnisse, die über diese Art von angeborenen Missbildungen, die auf osteogenetische Storungen unbekannter Ursache zurückzuführen sind, vorliegen und fügt einige Ueberlegungen von entwicklungsgeschichtlichen, anatomischen und pathologischen Standpunkt hinzu. Das klinische Bild seines Falles sowie der vom Verfasser vorgeschlagene Operationsplan wird ausführlich beschrieben.

SUMARIO

Atrofia congénita cubital distal

Se da conocer un caso de atrofia congénita cubital distal; se considera que mientras no exista documentación probatoria en contrario, se trata de la primera observación de su tipo. Blandin dió a conocer en 1837 una malformación congénita de tipo diametralmente opuesto, atrofia congénita cubital proximal.

El autor consigna datos informativos sobre esta clase de anomalías o malformaciones congénitas de los miembros, derivadas de trastornos osteogénicos cuya causa ignoramos; y hace consideraciones organogénicas, anatómicas y patológicas sobre el particular. Se relatan los hechos clínicos del caso en cuestión y se expone el criterio terapeutico, indicándose el tratamiento quirúrgico, de acuerdo con un plan operatorio propuesto por el autor.

RIASSUNTO

Atrofia congenita della porzione distale dell'ulna

Un caso di questa condizione patologica è riportato. Al presente, queste è la prima osservazione conosciuta di tale tipo di malformazione. Blandin riporto nel 1837 un caso di tipo opposto—atrofia *congenita della porzione prossimale dell'* ulna. L'autore passa in rivista la patologia di questa classe d'anomalie congenite o malformazioni che sono dovute a disturbi osteogenici di natural conosciuta, a aggiunge considerazioni personali organogeniche, anatomiche e patologiche. Le caratteristiche cliniche di questo caso sono presentate, con la procedura operativa proposta dall' autore.

WORLD'S FAIR DAY
OF THE INTERNATIONAL COLLEGE OF SURGEONS: MAY 25

FOR INFORMATION APPLY TO DR. EDWARD FRANKEL, JR.,
GENERAL CHAIRMAN OF ASSEMBLY, 217 EAST SEVENTEENTH ST.,
NEW YORK CITY, OR AT INFORMATION DESK

PHARYNGEAL DIVERTICULUM

ONE STAGE RESECTION*

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IN the past the classification of pulsion diverticula existing in the upper alimentary tract has been much disputed. It is the purpose of this paper to prove conclusively, on the basis of my operative experience in 104 cases, that pulsion diverticula are all pharyngeal in origin and eventually require surgical intervention.

No authentic case of pulsion diverticulum arising in the esophagus has come under my observation, nor have I been able to find a report of any in the literature.

All esophageal diverticula are tractional in origin and are due to periesophageal inflammatory disease. This type of diverticulum, except in rare cases, does not require surgical intervention. Pulsion pharyngeal diverticula are relatively common and should be recognized more frequently.

SITE OF ORIGIN

For many years it was almost universally accepted that pharyngeal diverticula arose from Laimer's triangle. This belief persisted until 1908, when Killian wrote his epoch-making article on the anatomy of the esophagus and pharynx. Not satisfied with the dissections done by Luschka and, later, by Laimer, he resolved to study the region of the hypopharynx and the esophageal orifice.

Much of Killian's labor went for naught until Sir Berkeley Moynihan investigated this area in 1927. In an article Moynihan corrected the erroneous belief that pharyngeal diverticula arise from Laimer's triangular area. He pointed out that this area is situated below the lower border of the cricopharyngeus muscle of the pharynx, hence, not in the pharynx.

Killian further demonstrated a possible area for the origin of the pharyngeal diverticula. He showed the presence of a defect below the cricopharyngeus muscle, which he called a slit. This slit is below the cricopharyngeus muscle and above the esophageal fibers. Killian's description is as follows: "The slit that we see on each side between the pars fundi-formis and the circular fibers of the esophagus is a very important area. Here in this slit the recurrent nerve passes through to divide into the anterior and posterior branches." Killian made no mention of this area in relationship to diverticula of the pharynx. It is cited here because of the work recently reported by Moynihan on dissections made by J. K. Jamison. It is due to this original work, done by Killian and confirmed by Moynihan, that I desire to establish in my series of cases the relative frequency of this site for the origin of pharyngeal diverticula.

Killian's studies also demonstrated that the lowermost bundle of the inferior constrictor muscle, which he called the sling bundle of the pars fundiformis, is the chief closing muscle of the esophageal opening. In the state of contraction it presses the opening of the esophagus together and holds it against the cricoid plate, producing a crescent-shaped opening with the concavity forward. In his text and by photograph, he further pointed out the influence of the cricopharyngeus muscle in the production of pharyngeal diverticula.

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* Read at the Second Annual Assembly of the United States Chapter of the International College of Surgeons, Philadelphia, Oct. 14, 1938.

The observation of Jamison, while not original, has crystallized knowledge of the subject. He observed that not only the inferior branch of the recurrent laryngeal nerve but also a branch of the inferior thyroid artery and vein and a bundle of lymphatics passed through this hiatus. This anatomic observation of Killian and Jamison explains the symptom of hoarseness present in nine of my patients. Likewise, it explains the presence of hoarseness which temporarily followed two of my operations. A curious fact concerning the postoperative hoarseness was that it was not apparent immediately after operation but came on gradually after the fifth day. The hoarseness in both cases, fortunately, disappeared.

That this slit is not an uncommon site for the origin of a diverticulum is further emphasized by the frequent presence of a branch of the inferior thyroid artery crossing the fundus of the sac. I have had occasion to ligate this vessel in at least 35 per cent of my cases. I believe that the deformity of the fundus of the sac, as shown by x-ray pictures, is caused by entrance of a branch of the inferior thyroid artery into this slit. If this is so, this supposedly unusual site of origin for diverticula would prove to be a rather common one of pharyngeal diverticula. Indeed, it is my belief that a diverticulum can arise from any portion of the pharynx where it is perforated by a branch of the interior thyroid artery. This belief is fortified by the origin of a diverticulum much higher than the cricopharyngeus muscle A defect of the oblique fibers in the posterior lateral wall of the inferior constrictor muscle was observed as though it had been punched out with an instrument. The sac was covered with a thick muscular coat—the only diverticulum in this collection which had a complete muscular covering. The x-ray and bronchoscopic studies confirmed this high origin of the sac. The late Dr. Manges reported "a rather large diverticulum originating a little higher than the average, apparently just below the larynx."

Briefly, true pulsion diverticula have been observed by me to originate in one of three areas: 1. They have arisen most frequently from the lateral wall of the pharynx between the cricopharyngeus muscle and the oblique fibers of the inferior constrictor of the pharynx, either on the left or on the right. In four of my patients the pouch originated from the right side of the pharynx. 2. The next most frequent site is the Killian-Jamison area. This is on the posterolateral wall of the pharynx, below the cricopharyngeus muscle and above the circular muscle fibers of the esophagus. Through this weak area the inferior laryngeal nerve, a branch of the inferior thyroid artery and a bundle of lymphatics pass. In this area more than 35 per cent of the pouches arose. 3. The least frequent site of origin has been through the upper portion of the inferior constrictor muscle, a site for another branch of the inferior thyroid artery.

SYMPTOMS

1. *Dysphagia.* This is the most common symptom of diverticulum of the pharynx. It varies from inability to swallow liquids or solids to a relatively small degree of inconvenience in swallowing. In the beginning, when the pouch is small, the individual is able to swallow after the pouch is filled; but as the pouch increases in size it frequently assumes a position between the esophagus and the vertebral column, so that when filled it obstructs the lumen of the esophagus to such a degree as to render swallowing impossible.

2. *Vomiting.* This is a [illegible]

symptom. Regurgitation of food from such a partially filled sac is an annoying condition. This varies from immediate regurgitation, as soon as the sac is partially filled, to regurgitation a number of hours after eating.

3. *Noisy Deglutition.* Many patients complain of this symptom, which is commonly so annoying as to cause the patient to eat alone. A number of my patients never ate in the presence of others or in public.

4. *Hoarseness.* This is not an uncommon symptom. Nine patients in this series complained chiefly of hoarseness.

5. *Tumor in the Neck.* Occasionally such a tumor may be palpated. This sign was present in five patients of the series. Invariably a gurgling sensation could be detected beneath the fingers when the patient swallowed.

While the symptoms described, when present, are helpful in leading one to suspect the presence of a diverticulum, the diagnosis is invariably made during roentgenologic examination.

PROGNOSIS

The prognosis compares favorably with that of any major operative procedure—it is good in 98 per cent of the cases. The question of mortality in diverticulum of the pharynx has undergone a revision in recent years. Now diverticula of the pharynx are recognized early. The sac does not reach the dimensions that I observed in an earlier series of cases; consequently the patient's physical condition at operation is better than that formerly seen. It was not unusual in the early cases to resort to gastrostomy preceding the operation for diverticulum. It have not done a preliminary gastrostomy on the last seventy-nine patients.

MORTALITY

1. *Mediastinitis.* Much is said by advocates of the two stage operation concerning the high mortality due to mediastinitis which follows the one stage operation. Where this opinion had its origin I do not know, nor have I been able to find any record of a high death rate due to mediastinitis in recent years. It has not been a complication in any of my 104 cases. I believe that mediastinitis should occur no more frequently with the one stage operation than with the two stage operation. Easy access to the sac and its rapid separation from the lateral and posterior wall of the esophagus are possible only when an esophagoscope is in the sac. The esophagoscope is of invaluable aid until the neck of the sac is reached, and during repair.

2. *Secondary Hemorrhage.* This is often stated as a complication of the one stage operation, without foundation. There were no secondary hemorrhages in this series.

3. *Recurrence of the Sac.* This was seen in two patients of this series. Both were in their late sixties and had a poorly developed musculature of the pharynx.

4. *Pulmonary Complications.* These not infrequently precede and follow the operation. Many of these patients have preoperative bronchitis as a result of overflowing of the contents of the pouch into the larynx during sleep. One of the three fatalities in this series was due to diffuse pneumonia.

5. *Renal Complications.* One patient, 67 years of age, died of uremia forty-eight hours after operation.

6. *Cardiac Complications.* One patient died from coronary thrombosis fourteen days following operation.

7. *Temporary Pharyngeal Fistula.* This occurred in five of the early cases. It was obviated in subsequent cases by improvement in technic.

8. *Wound Infection.* This seldom occurs as a complication.

There is no doubt that the two stage operation is the one of choice when the surgeon either discards the aid of the esophagoscope or when the aid of the esophagoscopist is not available.

I believe the operation of choice is that which at its completion leaves the pharynx and the esophagus in their normal positions, not angulated and not stenosed. This operation should not only remove the redundant sac but repair the defect in the pharyngeal wall. This procedure was first advocated by Jackson, and he, in conjunction with Gaub, reported two cases in 1915. Since then the surgical technic has been entirely modified. The procedure which has been described herein is not Gaub's technic but one which was devised by me.

The principles of this procedure are as follows: (1) The pharynx and esophagus are left in their normal anatomic relationship; (2) the hernia of the pharynx is repaired after the sac is ligated, amputated and transplanted beneath the inferior constrictor muscle of the pharynx.

TECHNIC OF OPERATION

Under rectal ether, intratracheal or avertin anesthesia, the patient is prepared in the usual manner, and an incision is made on the side on which the sac presents and along the anterior border of the sternomastoid muscle, from the level of the hyoid bone to 1 inch (2.54 cm) above the sternum and passing through the skin, platysma and deep fascia, exposing the anterior belly of the omohyoid muscle. This muscle may be divided transversely or retracted. With this incision the external jugular vein may be exposed and if so it should be divided and tied. The common carotid artery and the internal jugular vein are then exposed and retracted outward. If the thyroid gland is decidedly enlarged it is sometimes necessary to ligate and cut the superior thyroid artery. The trachea and the esophagus will be found to be encased in a common sheath, which is to be incised, exposing the esophagus in the posterior part of the wound and the trachea anteriorly. After this incision has been made, the trachea and thyroid are retracted toward the midline.

The esophagoscope is introduced into the diverticulum. The sac is emptied by aspiration thereby avoiding expressing the contents into the larynx. The interior of the pouch and the lower portion of the pharynx are then painted with an antiseptic solution. The esophagoscope is introduced into the fundus of the diverticulum and the sac transilluminated; then the esophagoscopist rotates the sac into the wound. The sac is grasped with intestinal forceps and drawn upward and outward, and the esophagoscope is withdrawn from the pouch. The sac is then freed to the junction of the diverticulum with the pharynx. Care must be exercised to free all muscle fiber from its neck. The neck of even the largest diverticulum is seldom ½ inch (1.27 cm) in diameter. A neck larger than this usually means incomplete dissection. The sac is transfixed at its junction with the pharynx with a small intestinal needle carrying no. 1 chromicized catgut in much the same manner as a hernial sac is transfixed. The neck of the sac is severed close to the pharynx. The stump is cauterized with pure phenol. After transfixation, ligation and amputation, the stump is cauterized and transplanted beneath the inferior constrictor muscle of the pharynx. If the pouch originates at Killian's slit, the cricopharyngeus muscle and the upper circular fibers of the esophagus are united. Care must be exercised not to include the inferior laryngeal nerve. During this procedure of muscle repair, the esophagoscope is in the esophagus. This detail is necessary in order to obviate stricture at the esophagopharyngeal junction. If this precaution is followed, none of the patients will require subsequent dilation of the esophagus.

The incision in the neck is closed in layers, no drainage being used except that afforded by a small piece of rubber tissue or cell silk placed beneath the deep fascia.

SUMMARY

In a series of 104 patients with pharyngeal diverticulum, all operated on by the one stage method, there were three deaths. One hundred and one patients completely recovered. None of the cases was complicated by mediastinitis. None of the patients required postoperative esophageal dilation.

Use of the esophagoscope prevents angulation, stenosis and atresia of the esophagus. Hoarseness is often a chief complaint. There are three areas of the pharynx from which diverticula may arise.

The one stage operation is the reasonable method of treatment of pulsion diverticula of the pharynx. The results depend on rational surgical procedure and accurate approximation of tissues.

RÉSUMÉ

Le Diverticule Pharyngé: Résection en un Temps

Dans une série de 104 malades opérés en un temps pour diverticule du pharynx, il y eut quatre décès. Il y eut 101 guérisons complètes. Aucun cas ne fut compliqué de médiastinite. Aucun cas ne nécessita la dilatation oesophagienne post-opératoire. L'emploi de l'oesophagoscope prévient l'angulation, la sténose et l'atrésie de l'oesophage. L'enrouement est le symptôme dont se plaignent le plus les malades. Les diverticules du pharynx peuvent débuter dans trois différentes régions. L'opération en un temps est une méthode raisonnable dans le traitement des diverticules du pharynx. Les résultats sont en rapport avec une bonne technique et une approximation exacte des tissus.

ZUSAMMENFASSUNG

Pharynxdivertikel: Einzeitige Resektion

In einer Serie von 104 Patienten mit Pharynxdivertikel, die alle nach dem einzeitigen Verfahren operiert worden waren, waren 3 Todesfälle zu verzeichnen. 101 Patienten wurden völlig wiederhergestellt. In keinem Falle war eine postoperative Erweiterung der Speiseröhre nötig. Die Anwendung des Oesophagoskop vermeidet Knickung, Stenosis und Speiseröhrenverschluss. Oft ist Heiserkeit die hauptsächliche Beschwerde. Der Pharynx hat drei Stellen, an denen sich Divertikel entwickeln mögen.

Die einzeitige Operationsmethode ist die gegebene Behandlung in der Chirurgie des Pulsionsdivertikels des Pharynx. Das Ergebnis hängt von dem zweckmässigen chirurgischen Vorgehen und der genauen Annäherung der Gewebe ab.

SUMARIO

Diverticulum de la faringe: Resección en un tiempo

En una serie de 104 enfermos con divertículum de la faringe, todos operados por el método de un tiempo, hubieron tres muertes y ciento un enfermos completamente curados. Ninguno de los casos se complicó con mediastinitis. Ninguno de los enfermos nesecitó dilataciones postoperativas del esófago.

Uso del esofagoscopio previene angulación, estenosis y atrésia del esofago. Ronquera es á menudo la queja principal. Hay tres areas de la faringe por donde diverticulos pueden presentarse. La operación de un tiempo es el método lógico de tratamiento de los divertículos de pulsión de la faringe. Los resultados dependen de procedimientos quirúrgicos racionales y aproximación perfecta de los tejidos.

RIASSUNTO

Diverticulo faringeo

In una serie di 104 pazienti con diverticoli faringei, tutti operati in unica seduta, ci ebbero 3 morti. In nessuno caso vi fu complicazione di mediastinite. In nessuno dei pazienti fu necessario di praticare la dilatazione esofagea. L'uso dell'esofagocopo previene l'angolazione, stenosi ed atresia dell'esofago. L'afonia è spesso l'unico disturbo. Vi sono tre zone nel faringe dove possono prodursi diverticoli. L'operazione in unico tempo è un metodo ragionevole di trattamento. I risultati dipendono da un procedimento razionale ed accurata approssimazione dei tessuti.

New Instruments

AN IMPROVED GASTRIC CLAMP

RICHARD A. LEONARDO, M.D., CH.M., F.I.C.S.

ROCHESTER, N. Y.

THE value of an efficient clamp that crushes and sutures (with metal clips) the stomach is well recognized by many surgeons. When one becomes expert in its use, he may well save twenty to thirty minutes of operative time during gastrectomy. Besides, thorough hemostasis and avoidance of spilling of stomach contents are obviously also of great value. I believe that my instrument,* which is a modification of de Petz' clamp accomplishes these advantages better than any instrument devised, and it goes one step further in that it also severs the stomach after it has been first crushed, then sutured, and the knife cuts the stomach beyond the proximal double row of metal sutures. Obviously, since part of the fundus, together with the antrum and pylorus, is to be removed, a single distal row of metal sutures is sufficient. On the other hand, the double row of metal sutures on that part of the stomach which is going to remain is necessary because a single row is insufficient for perfect hemostasis.

I have used the de Petz clamp on numerous occasions, and practically every time I have noticed a small to moderate amount of bleeding from in between the single row of sutures after the stomach has been cut across. Not only does my modification provide for a double row of sutures, but the double row is inserted similar to bricks in building a wall; viz., the second row overlaps the unsutured portions of the first row. Since the two rows of sutures are close together, there will be no redundance of crushed (later to become necrotic) stomach wall.

I do a posterior (retrocolic, isoperistaltic) anastomosis between the jejunum and the stomach. It is possible to do a typical Billroth II operation, and in that case one may completely bury the metal sutures by two rows of catgut or silk sutures. I resort to a method which, I believe, saves considerable time. This is similar to the technic pursued in the clinic of Professor Verebely at the University of Budapest. The angle where the metal sutures and the greater curvature meet is cut off. I make sure that there remains an opening almost 2 inches (5.08 cm.) long. Before cutting off this corner a rubber-covered clamp is placed so as to prevent bleeding and spilling of stomach contents. The anastomosis is performed at this angle. In fact, I insert a seromuscular catgut continuous suture before cutting off the corner of the stomach. After the corner is removed, a second row completes the procedure anteriorly. A small portion of the jejunum is sutured proximal to the site of anastomosis to the suture line of the stomach all the way across, from the upper corner of the site of anastomosis up to the lesser curvature of the stomach, but only after the metal sutures have been inverted by two rows of catgut or silk sutures. Thus in selecting the site of the jejunum to be used for the anastomosis, one must make sure of sufficient proximal jejunum so that later one can sew it to the sutured end of the stomach, above the site of anastomosis.

I believe that by resorting to this procedure one shortens the operative time and has a more thorough technic. Surgical shock is apt to be less. The metal sutures will later slough into the gastro-intestinal tract and pass with the stool. They cause no inconvenience to the patient. Of course, the duodenum is to be closed in some manner, and this varies with the technic of the operator.

The knife in my apparatus is removable so that one can do without it if preferred, but it seems that the crushed stomach can better be divided with it.

There are other clamps with metal sutures that are suitable for gastrectomy, but most of these are too large or too bulky. The Hültl machine inserts four rows of metal sutures, but they are so small and so delicate that they do not remain in place, they give no efficient hemostasis, and they are difficult to put in the machine. This renders it hard for the nurse to prepare the machine for operation. Besides, the Hültl machine is very heavy. My apparatus, especially when it is made with light metal, as I recommend, weighs only 1 pound (0.5 kg.). The de Petz clamp also weighs more than my clamp. In the de

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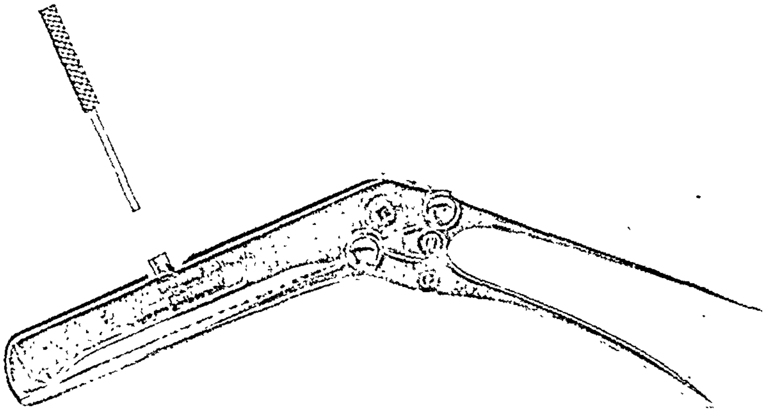
* The clamp which I devised is manufactured by S. G. Krebs Co., 351 Second Ave., New York, N. Y.

Petz clamp a long rod emerges from the back of the instrument, as the sutures are being inserted into the stomach. The surgeon must turn a wheel which is attached to the side of the de Petz clamp, and as he turns it counterclockwise the sutures are inserted into the stomach, beginning at the lesser curvature. When all the sutures are placed, the projecting rod is as long as the handles of the clamp, and caution is demanded during the manifold manipulation of this apparatus if the surgeon is to avoid crushing injury to his hand. Besides, the surgeon must also divide the stomach across, and this takes time, in addition to that occasioned by the fact that the sutures are inserted in pairs, one after the other; thus the de Petz clamp works considerably slower than mine. In my clamp there is a removable lever that fits into a special opening in the top of the instrument. I insert this lever into its socket in the upper jaw and depress it its full length (not more than 120 degrees excursion) and then pull the ring outward (toward myself); this pulls on the wire and draws the knife all along its track, thus promptly cutting the stomach from its lesser to its greater curvature. I believe that this instrument has distinct advantages over all similar clamps at present available.



Author's gastric clamp.

182 Versailles Road

VISIT THE EXHIBITS, ROOSEVELT HOTEL

American Sterilizer Company Products

The American Sterilizer Company, largest manufacturer of sterilizers, operating tables and lights, will have on display in convention Booths 24 and 25 various types of pressure and nonpressure sterilizers with the latest scientific equipment for automatic control and precision performance, the new American head-end control operating table, the American Luminaire line of surgical lights, and the new and popular fully automatic office type sterilizer.

New Heartometer

The new Heartometer, a scientific precision instrument for permanent recording of a perfect pulse count and an accurate systolic and diastolic blood pressure reading, will be shown in Booth 17 of the International Assembly display by the Cameron Heartometer Company. This instrument also produces a graph which records the condition of the nerves, valves and muscle of the heart, showing many heart disorders in their earliest and advanced stages.

CARLOS JUAN FINLAY, PIONEER
1833-1915

V. O. CARDENAS, M.D.
CHICAGO

CARLOS JUAN FINLAY was born in 1833 in Camaguey, Cuba. At the time of his birth it was little suspected that modern times, due to rapid development of science, was to count him among its pioneers, with no precursor to share his unique and original ideas. During his early years he suffered an attack of chorea, but continued his studies. In 1855 he graduated from Jefferson Medical College, Philadelphia, where his most influential teacher was John Kearsley, an early worker on the germ theory of disease. Dr. Finlay visited various countries and increased his knowledge of medicine. He returned to Havana, where he married and settled down to practice medicine in 1865.

His first years of practice brought him not public hospital patients but patients whose sorrow, poverty and needs were near to him. He saw them die during epidemics, of which those of yellow fever were the most threatening. With determination he began his investigations, with two points in mind: a dying patient and a specific cause.

Following is a transcription of the words of Dr. Enrique M Porto, on an occasion when the memory of Dr. Finlay was honored: "I had not the pleasure to share his work with him, but perhaps I was the first to help him in some of his investigations, about 1880 to 1883. I was the head of a vaccination center, which work I shared with Dr. Antonio Díaz Albertini, Sr. One day Dr. Finlay presented himself to me at the center with a group of test tubes which contained mosquitoes. He had come to ask me to allow him to make direct application with his test tubes over the vaccination pustules of the cattle on exhibition, and that good man, during fifteen or twenty days, applied his test tubes directly over vaccination pustules to see whether he could afterward produce reactions in the persons to whom he applied the tubes Thus in 1881 Dr Finlay had a clear picture of ideas which he was putting into practice. I confess that I used to laugh at his experiments, and so did the others at the medical school. Today they do not admit it; they do not like to confess it."

Dr Carlos Juan Finlay, 1833-1915

During these early years of his experimentations Dr. Finlay entertained new ideas, many of which he had to eliminate, accepting those that conformed with science. In a very scientific way he considered the possibilities related to the transmission of yellow fever He thought that climate and the chemical composition of the atmosphere had a close relation with the disease, and therefore studied them in detail, and was convinced that yellow fever was more prevalent during the summer than during the winter months. But in the course of his duties he learned that ships which had been fumigated and thoroughly inspected, with no suspicious case on board, reported cases of yellow fever weeks later while sailing in colder regions. These facts convinced him that any theory which attributed the origin and propagation of yellow fever to atmospheric, miasmatic or meteorologic conditions must be considered indefensible, and that an intermediary agent which was able to place itself in a ship or region was the transmitting factor of yellow fever.

The mosquito was selected as the intermediary agent not from coincidence but after long observation of patients and facts about the way the disease was contracted. Dr. Finlay studied the varieties of mosquitoes, their geographic distribution, their habits and way of propagation. He found that Culex Cubensis was the variety most common in regions where yellow fever was present and observed that yellow fever did not exist in regions free from mosquitoes of this type. He used this mosquito for his experiments. The female is the one that sucks the blood, the male feeding on vegetable juices. This mosquito was the ideal medium for direct transmission of yellow fever, and that direction he followed in his work.

Dr. Finlay was impressed at the time by the work of Dr. Sternberg, who left a collection of photomicrographs showing that the red cells were discharged unbroken in the hemorrhages of yellow fever, and the fact that the hemorrhages did not leave any apparent lesion of breakage in the blood vessels led him to the conclusion that yellow fever should be sought for in the vascular endothelium. Observing that the disease was transmissible, leaving immunization in the persons who had suffered from it, and noting the phenomenon of regular order comparable with that present in eruptive fevers and those in which the seat of eruption was the vascular endothelium, he was led to state the following conclusion: "Finally, on comparison of the disease to smallpox and to the conditions in vaccination, it occurred to me that in order to inoculate yellow fever it would be necessary to take the inoculable material from within the blood vessels of a yellow fever patient and inject it into the interior of a blood vessel of the person to be inoculated. All of which conditions the mosquito satisfies most admirably through its bite, in a manner which it would be almost impossible for us to imitate."

Three conditions are therefore necessary in order that yellow fever may be propagated: 1. The existence of a yellow fever patient into whose capillaries the mosquito is able to drive its sting, impregnating these with virulent particles, at an appropriate stage of the disease. 2. The life of the mosquito must be spared after biting the patient until it has a chance to bite the person in whom the disease is to be reproduced. 3. Some of the persons whom the mosquito bites thereafter must be susceptible to the disease.

Dr. Finlay was a man of science and wished to tell the world about his discoveries through the most ethical and unshakable medium, so on Aug. 14, 1881, he presented his work before the Academy of Medical, Physical and Natural Science of Havana, and it was recorded in the annals of the Academy year (17:147—169, 1881). This paper and many other facts about Dr. Finlay's work were published by Dr. Emerson Crosby Kelly, of the department of surgery, Albany Medical College, in the Medical Classics (February, 1938).

To my way of thinking, Dr. Emerson Crosby Kelly has opened a discussion about yellow fever which is still far from being settled. He claims that yellow fever is a disease of tropical and subtropical countries, characterized by fever with jaundice, toxemia and albuminuria, and a tendency to hemorrhages, especially from the stomach. In this belief he is backed by the facts in grave cases of yellow fever. On the other hand, Dr. Finlay; Dr. Mathis, of Paris, and Dr. Francisco Dominguez, of Cuba, all have claimed that yellow fever is a very mild disease and have expressed the belief that the forms accepted by Dr. Kelly are the exceptions; and they are backed by the undoubted fact that the immunization of persons of certain tropical regions was due to attacks of yellow fever so mild in many cases that these could be considered ambulatory. Dr. Finlay described all the forms of yellow fever, and in all his inoculations, including the five cases reported with his original work, he avoided producing grave cases.

In the extraordinary session of the Academy of Medical, Physical and Natural Sciences of Havana, on June 20, 1938, in honor of Dr. Francisco Dominguez, the latter said: "We, the Cubans, and especially the doctors, are profoundly obligated to Dr. Emerson Crosby Kelly for the deference he showed toward Dr. Finlay, who had been so many times silenced in the United States, when yellow fever was discussed, and especially for the publication of Dr. Finlay's first work, in which he announced the success of his investigation, presenting the first five cases of inoculation by the mosquito, in three of which the results were positive."

On Jan. 3, 1933, Dr. J. C. Stefanopoulo, in a communication to the Academy of Science of Paris, said that the frustrated form of yellow fever was frequent in the Negro, a form that had been described by Dr. Finlay.

Dr. Francisco Dominguez said to me during my visit to Havana last fall that Dr. Finlay's work was so great and perfect that science was obliged to recognize it and place him in the position he deserves. Let us hope for the truth of science that we may see his name forever connected with yellow fever and the mosquito as an intermediary carrying disease from person to person.

RADIO ADDRESS

PRESENT STATUS OF THE CANCER PROBLEM*

ANDRÉ CROTTI, M.D., F.A.C.S., F.I.C.S.
President of the International College of Surgeons
Head of the Columbus, Ohio, Cancer Clinic
COLUMBUS, OHIO

ONE hundred and fifty thousand people died of cancer during last year in the United States. Since the foundation of the Columbus Cancer Clinic, in 1921, up to January, 1938, 1,372 cancerous patients applied for advice and treatment. Of these, 777 have died. It is generally conceded that at least one third of this frightful mortality could be eliminated if the laity would be fully cognizant of the cancer problem as we see it today. Hence the reason for the educational campaign throughout the nation, undertaken under the auspices of the American Society for Control of Cancer.

First let me state that the total incidence of cancer among nations varies little; what varies most is the organ incidence. Furthermore, distribution of cancer among men and women is about the same.

Cancer is not confined to the human race alone; it is found in animals as well, and its behavior in animals is about the same as in human beings. In both groups cancer appears at the same time, namely, middle age and the late period of life. Finally, animals, like human beings, show a definite susceptibility of certain organs for cancer, but this susceptibility varies with the animal species. *For instance, cancer of* the breast is common in women, very common in mice, but practically unknown in cows, and cancer of the stomach is very frequent in man but is rare in animals.

Is cancer on the increase? It seems to be.

First let me divide the span of life of a human being into three periods: first, that from birth to 40 years of age; second, that from 40 to 60 years of age, and, third, that from 60 years up. The cancer death rate per hundred thousand population in Ohio has been as follows:

Period	*Per 100,000 Population* 1910	1930
From birth to 40 years	8.6	11.7
From 40 to 60 (so-called cancer age)	142.5	117.3
After 60	490.6	748.2

The same study applied to the cancer death rate throughout the United States brings out the same results, namely, that in Ohio and in the *United States the cancer death rate incidence* during the first period of life has increased little, that during the second period of life it has even decreased some, but that during the third period, namely, after 60 years of age, it has increased alarmingly, almost doubled. This shows that the cancer age is not so much the second period of life, namely, from 40 to 60, but after 60.

How are we to explain this alarming increase? There is no question that our better knowledge of the disease, our better diagnostic facilities, etc., may explain that increase, but it does so only partly. Perhaps a good reason for the increase is that preventive medicine, better sanitation, and especially our highly efficient welfare organizations, maternal welfare, etc., save a large number of individuals and prolong their span of life only to carry them to the dreaded cancer age. It is a well known fact that countries where sanitation is the poorest have a much lower cancer incidence than regions where sanitation is highly developed, because people die much younger in the former than in the latter. *Consider the average span of life of the Hindu,* which is 36 years, as against the average span of life of the American, which is 54 years. The Hindu has not yet had time to reach the cancer age.

Is cancer contagious? It is not. The care of a cancer patient does not entail any possible danger of cancer contamination to the attendants. Several scientists have even tried to inoculate themselves with cancer materials and have always failed. So it can be truly said that cancer is not contagious.

Is cancer hereditary? It is not. Those who contend that it is hereditary are basing their contentions on laboratory observations, which in no way represent conditions observed in the human race. It has been shown by some scientists that by resorting to intensive "inbreeding," to intermatings of brothers and sisters in mice, thus producing a high degree of consanguinity, cancer incidence in mice could be brought to a very high degree; hence the conclusion that cancer is hereditary. The laboratory conditions under which cancer was produced in mice do not exist in the human race. Here the matings are purely accidental, governed solely by the affinity of one individual for another. We do not marry our brothers or sisters. We are not thoroughbreds; we are mongrels. If in mice no intensive inbreeding is resorted to and if reproduction is allowed to be again the result of chance matings, the cancer incidence among laboratory animals does not differ from that observed in man; it sinks to its average level. Thus it can be said cancer is not hereditary.

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* This address, delivered in Philadelphia, Oct. 13, 1938, at 12:00 noon, was broadcast over radio station KYW.

Cancer is not a systemic disease. It begins locally, in one tiny spot, and remains local for awhile, and only later, sometimes much later, does it spread out of its bounds to become systemic. This fact is the crucial point in combating cancer. Indeed, if this is detected in its early beginning, a permanent cure can be expected, if the cancer is removed early and completely. Thus it can be truly said that cancer is not only arrestable but is curable if caught early. In fact, one can say that any form of cancer no larger than a pea can be cured with almost 100 per cent certainty, provided the cancer is removed widely.

However, the chances for complete and permanent cures dwindle rapidly if the size of the cancer is allowed to progress unchecked for too long a period. If, for instance, we take at random 100 patients with cancer of the breast who apply for treatment, in 50 the disease is inoperable and incurable, in 30 it is operable but advanced, and in only 20 is it in the early stages. The 50 patients of the first group are doomed; little or nothing can be done for them. Of the 30 patients in whom the disease is operable, but in only about 15 per cent of whom it is advanced, life can be prolonged for a few years. Of the 20 patients operated on in the early stages about 75 per cent can count upon a cure.

These figures point the way out in a very eloquent manner. Indeed, the only solution for the time being lies in the early recognition and the early adequate treatment of the disease.

It is truly tragic that nature did not see fit to make cancer in its early beginning painful. If it only were! Many thousands of lives would then be spared every hour. Unfortunately, pain appears only when it is too late.

There are, however, "warning signs" which when heeded may lead to an early recognition of the impending danger. Any sore on the skin, especially on the lips, which does not heal, any lump in the breast or elsewhere which persists, any abnormal discharge, bleeding from any of the natural orifices of the body, any persistent "indigestion" and loss of appetite which resists medical treatment, any persisting deviation from the normal in the intestinal function, etc., all these must be regarded as danger signals pointing toward cancer. To be sure, they may not be due to cancer, but it must be determined that the condition is not cancer.

Only by thinking of cancer, only by bending all our efforts toward detecting cancer early and treating it early with surgery, radium and x-rays and also by preventing the appearance of cancer through dealing with the conditions which are known to lead to formation of cancer can we hope to reduce the frightful cancer death rate existing today.

VISIT THE EXHIBITS, ROOSEVELT HOTEL

Curvlite Instruments

Curvlite, the original cold-light plastic instruments, to be on display at convention Booth 49 of the International Assembly, provide directed diagnostic light and will not conduct heat or electricity. Another reason for the tremendous popularity of Curvlite instruments (Curvlite is the world's largest selling cold-light "plastic" instrument) is the fact that they are guaranteed unbreakable. Manufactured by Curvlite Products, Inc., 567 Third Ave., New York.

Medical Equipment on View

Of considerable interest at the convention of the International College of Surgeons will be the exhibit of the Ohio Chemical and Manufacturing Company (Booth 15). They will feature the Heidbrink Kinet-O-Meter, Heidbrink Oxygen Tents, Helium-Oxygen Therapy Apparatus and the new B-L-B Inhalation Apparatus, as well as other equipment and accessories which this company supplies to the medical profession.

RADIO ADDRESS

AIMS AND OBJECTIVES OF THE INTERNATIONAL COLLEGE OF SURGEONS*

MAX THOREK, M.D., F.I.C.S., F.I.C.A.

Professor of Surgery, Cook County Graduate School of Medicine

CHICAGO

SURGERY was once the *bête noir* of medicine. In the minds of the average citizen, "to be operated on" was almost the same as to take with cold deliberation an uncertain potion which was almost sure to be followed by death.

Time and experience have changed all that. Like the circuit rider, who brought to the outlying homes his edifying news of eternal salvation and of faith in an Infinite Power, or the family doctor, who fetched everything from babies to domestic peace, the surgeon has become a family watchword. Even the humblest mind has been taught to recognize that there are times when only skilful surgery brings relief; and because of this teaching, because of this assimilated knowledge, the erstwhile rough path of the surgeon has burgeoned with the fragrant shrubs of faith, confidence, trust and optimism.

From this cognizance of human dependency, to the honest surgeon there has come a new responsibility. This responsibility is the knowledge that he must not fail in any trust reposed within him. And to keep in tune with this responsibility the surgeon finds himself spurred to a deeper effort, and to a stronger endeavor to produce such results of science for suffering humanity that the millenium shall seem to have appeared.

The watchword of stability and success for the United States, all through the decades of storm and circumstance, through war and peace and depression and glean of golden harvest, has been that "In Union there is Strength."

This maxim which has served our country is an unsurpassable slogan for the professions that serve that country and through that country serve the world It is therefore well for all crafts, arts and sciences to realize that in group study, group performance and group consultation, the highest degree of the greatest good for the greatest number can best be achieved

From such realization comes the basic reason for the founding of the International College of Surgeons Humanity and mortality know no boundary within the eye of human beings A man is a man wherever he exists He is begotten, and he begets his kind by the same process. Creeds may differ, climates vary and civilization vacillate, but man the fundamental, and man the primitive, whether his skin be black, white, red or yellow, is essentially the same in his bodily structure and his physical ailments. According to the oath of Hippocrates, the medical profession is bound to care for the ailing flesh of mortal man, and the demands on the profession are not affected by degrees of latitude or of longitude. Hence the *common knowledge is the common good.*

And that, if nothing else, stands as the reason for the existence of the International College of Surgeons. As in music and in the plastic arts, there exists beyond dispute a common language of science and of skill. A surgeon may amputate a man's leg or repair his damaged internal organs if he can speak only Scandinavian and his patient knows only Hottentot. But the surgeon must be competent. And so the exchange of ideas and of experiences and of results from laboratory research and operating room experience are essential between nations if the maximum of efficiency and proficiency in the service of mankind is to be achieved. This is done best by a recognized, authenticated group, correlating its activities, its research and its findings with other recognized groups. The economy of time, the salvation of human life and the expertness of technic thus achieved is incalculable.

Since the constituents of the International College of Surgeons are representative men from the United States, England, Switerland, Germany, Czechoslovakia, Rhodesia, Austria, Australia, Belgium, Bulgaria, China, Egypt, France, Spain, Italy, Japan, the Netherlands, Poland, Portugal, Rumania, Russia, Argentina, Bolivia, Uruguay, Colombia, Chile, Syria, Turkey, Venezuela, Cuba, Mexico, Brazil, Peru, Norway, Denmark and Sweden, their common language is the mercy that dwells in the "healing knife."

To the surgeon there is no explanation necessary. To the laity the "healing knife" is best described as the use of the instrument that renders innocuous by removing that which is useless, poisonous and threatening life and which enables the repair of that which is maimed. Next to the "pay envelope," surgery has done more to keep together the modern home than any other modern aid.

It may be the amputation of a limb hopelessly crushed and useless and the retaining of which will send deadly poisons through the system that calls for the skill of the surgeon. It may be an affected internal organ or a death-dealing cancer eating away a helpless victim, or the comparatively simple excision of a tonsil or an adenoid, or, perhaps, the involved surgery of the complex nervous system, or the intricate operation by which the race is perpetuated that needs the surgeon's skill.

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* This address, delivered in Philadelphia, Oct 13, at 8·45 p. m., was broadcast over radio station WIP.

Any human being who can be saved from physical pain or economic inefficiency is a direct asset to the State, and it is as an economic as well as an humanitarian asset that the surgeon's skill must be regarded. Thousands upon thousands of men, women and children have been lifted from the depths of dependency and despair by the skill of the modern surgeon. The blind have been given sight, the crippled have been helped to walk and the bedridden to rise and to go forth comparatively, if not completely, whole as a result of a trip to the operating room. Maternal mortality has been reduced almost as much by surgical knowledge as by that antisepsis conceived and developed by the immortal Ignatz Philip Semmelweis.

Aside from major correctives such as the straightening of crooked spines, and the removal of diseased tissues or organs or the adjustment and repair of misplaced or abnormal organs, surgery has done much to alleviate human ills of lesser gravity. Everywhere, and every hour, the sincere surgeon with his heart in his work spends countless hours in experiment and in research. Perfection of technic emanates from patient toil. Exchange of discoveries made in these hours of toil is one of the incalculable benefits that arise from group association, and it is because of this that medical and surgical men unite in groups such as the American Medical Association, the American College of Surgeons and the International College of Surgeons. Because there is a standard of ethics set and maintained by each of these bodies, each of which is reliable, recognized and standardized, it is possible for their findings to be accepted and used just as the housewife knows that when she purchases commodities of a reputable brand that she can depend upon that commodity for anticipated results.

The world at large has come to know that health is the most dependable wealth. Gradually the day of the nostrum is dying. Hygiene takes the place of the witch's brews of yesteryear. But hygiene alone cannot replace the mechanized science of surgery. A crooked tree must be made straight by some mechanical device; fungus growths must be cut away from an ailing vine. And so must the scalpel be brought into play when a dire abnormality, misplacement or destructive growth threatens the entire bodily structure.

When *not* to operate is as essential as when to operate.

The invisible line between is sought constantly by the research workers in the realm of surgery. And the wider that realm, the more closely it is interknit by group association, the greater its benefaction for the human race.

A great factor in this group association, it is hoped, will result from the activities of the International College of Surgeons.

The International College of Surgeons is a purely scientific organization incorporated solely for the advancement of the art and science of surgery in all its branches. The chapters of the various countries representing the International College of Surgeons are free to formulate by-laws to suit the needs of their respective countries and yet be governed by a central, unbiased body of eminent surgeons. The Members and Fellows of the American Chapter of the International College of Surgeons are obliged to live up to the code of ethics of the American Medical Association, and members and fellows of chapters of other countries must adhere rigidly to the codes of ethics laid down by their respective countries. The International College of Surgeons stimulates effort by awarding prizes and distinctions for theses and successful contributions to be passed upon by an outstanding committee of surgeons. These awards are open to any surgeon, anywhere in the world, regardless of nationality, creed or race. And it promotes through its International Committees, its assemblies, bulletins and the *Journal*, the dissemination of knowledge of the constructive surgical advances made. It aspires to cooperation, the creation of an inflexible "esprit de corps," and staunchly discourages antagonisms. It is strictly nonsectarian and nonpolitical. Its ideals are based on Pasteur's aphorism: *"La science n'a pas de patrie parce que le savoir est le patrimonie de l'humanité, le flambeau qui éclaire le monde"* and its motto—*Pro Omni Humanitate*. It is decidedly against arbitrary restriction of merit, is free from prejudices and aspires to the ideal of *Palman qui feruit mereat.*

It is free from the taint of personal gain. Not a single dollar has been paid to any one of the organization for services. The organization work is carried on by voluntary contributions. The International College of Surgeons recognizes the surgeon and his accomplishments and is not influenced by his financial, political or other irrelevant status.

Surgical and hospital practice in the last twenty-five years have achieved an outstanding eminence. One of the most effective stimuli in hospital standardization in the United States and of surgical betterment generally was inaugurated by the American College of Surgeons.

It is largely due to the endeavors of this body that the United States has triumphed as it has in such approximate perfection of hospital and surgical standardization—service that is an outstanding and virile demonstration of the exemplary progress made by surgery and by hospitals in their ministrations to humanity.

Thus it is in a spirit of cooperation with all surgical organizations that the International College of Surgeons sets forth upon its way, for the relief of suffering and the benefit of all mankind.

SCIENTIFIC ASSEMBLY OF THE INTERNATIONAL COLLEGE OF SURGEONS

Sunday, May 21, to Thursday, May 25, 1939 (Inclusive)

Headquarters: Hotel Roosevelt, New York

About thirty nations of Europe and the Americas are expected to be represented.

SCIENTIFIC PROGRAM

Monday forenoon and afternoon, May 22, and Tuesday forenoon and afternoon, May 23 (addresses, papers, demonstrations).

OTHER ACTIVITIES

Sunday, May 21. Reception for distinguished foreign visitors.

Monday noon, May 22. Group luncheon.

Monday evening, May 22. Formal Convocation, followed by buffet supper.

Tuesday noon, May 23. Round-table luncheon.

Tuesday evening, May 23. Formal banquet.

Wednesday, May 24. Clinic and Hospital Day.

Thursday, May 25. International College of Surgeons Day at the New York World's Fair.

Special entertainment for the visiting ladies.

Special R. K. O. broadcast, 1,000 seats available.

Special tickets to Hayden Planetarium.

Motor bus tours of New York City.

Trip to Chinatown.

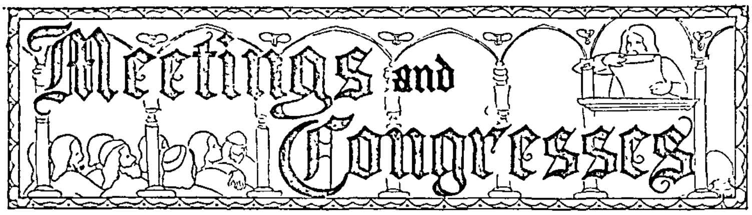
Visits to American Museum of Natural History and Metropolitan Museum of Art.

Radio broadcasts by distinguished surgeons.

The delegates of the International Congress of Military Medicine and Pharmacy will be our guests at our various social functions at the Hotel Roosevelt.

VISITING SURGEONS ARE WELCOME

FOR DETAILED INFORMATION ADDRESS DR. EDWARD FRANKEL, JR.,
217 EAST SEVENTEENTH STREET, NEW YORK CITY



Second Annual Assembly of the United States Chapter

of the

INTERNATIONAL COLLEGE OF SURGEONS

Philadelphia, Oct. 13 and 14, 1938, Bellevue-Stratford Hotel

ANDRÉ CROTTI, M.D., *President*

MOSES BEHREND, M.D., *General Chairman*

Three hundred and eleven surgeons from 39 states and 6 foreign countries participated.

Dr. Moses Behrend appointed the following committees:

Committee on Scientific Program: Dr. W. Wayne Babcock, Chairman; Drs. P. Brooks Bland, E. L. Eliason, William Bates, D. Roman, Walter I. Lillie, Temple Fay.

Committee on Clinics: Dr. William Bates, Chairman; Drs. Thomas A. Shallow, Walter I. Lillie.

Ladies' Entertainment Committee: Mesdames Chevalier L. Jackson, W. Bates, W. I. Lillie.

Committee on Publicity: Dr. Temple Fay, Chairman; Drs. John Royal Moore, Thomas A. Shallow.

Committee on Hotel Reservations: Dr. M. A. Weinstein, Chairman; Drs. D. Roman, Earl Craig.

Committee on Banquet: Dr. Chevalier L. Jackson, Chairman; Drs. M. A. Weinstein, Earl Craig.

SCIENTIFIC PAPERS

Thursday, Oct. 13, 2:00 p. m.

MOSES BEHREND, M.D., *General Chairman, Presiding*

The Meeting was called to order by Dr. Behrend. Invocation by Rev. William F. Fineschreiber. His Honor Mayor S. Davis Wilson was represented by Dr. William C. Hunsicker,[1] Director of the Public Health of Philadelphia, and His Excellency Governor George H. Earle by Dr. Edith MacBride-Dexter, Secretary of Health of the Commonwealth of Philadelphia.

DR. WILLIAM C. HUNSICKER, Philadelphia: It is fitting for surgeons to convene in Philadelphia, as this is the birthplace of American medicine. To John Kearsley, a native son, belongs the credit for acting as preceptor for young men desirous of studying medicine, as early as 1717. Dr. Thomas Cadwalader was the first surgeon of Philadelphia to receive his medical education abroad, the first to make a necropsy for scientific purposes and the first to use electricity in the treatment of disease.

Moses Behrend, M.D., F.A.C.S., F.I.C.S., General Chairman of Assembly.

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[1] Dr. Hunsicker died January 10.

Dr. John Morgan and Dr. William Shippen, Jr., were contemporaries in colonial times. Both were interested in supplanting the old apprentice system of medical training by medical school education. Morgan was instrumental in founding the first medical school in America, later to become the medical department of the University of Pennsylvania. Shippen was a pioneer teacher of obstetrics and was the first to dissect human bodies.

Dr Thomas Bond in 1756 performed the first recorded lithotomy in America, at the Pennsylvania Hospital. He also devised the Bond splint. Dr. John L. Hodge invented a pessary and obstetric forceps. Dr. S. D. Gross devised a transfusion apparatus, foreign body extractor, bullet probe, artery forceps, tourniquet and splints. Benjamin Rush is credited with being one of the greatest clinicians this country has produced. Dr. D. Hayes Agnes was revered as a surgeon, and his assistant, Dr. J. William White, was also well known.

Among more recent surgeons might be mentioned W. W. Keen, pioneer in brain localization, a Civil War surgeon and a writer; Dr. J. Chalmers DaCosta; Dr. Joseph Price, pioneer in modern asepsis hastening the surgical triumphs in gynecology and obstetrics; Dr. John B. Deaver, and his almost equally famous brother, Dr. Harry C. Deaver; Dr. George E. de Schweinitz, world-famous ophthalmologist; Dr. Edward Martin; Dr. John G. Clark, noted gynecologist, and Dr. William B. Van Lennep.

The first hospital in the United States, the Pennsylvania Hospital, was founded in Philadelphia in 1751, through the efforts of Dr. Thomas Bond and Benjamin Franklin. The first American school of anatomy was established here in 1762 by Dr. William Shippen, Jr. At the second convention of the American Medical Association, held in Philadelphia, representatives of 28 colleges and 40 medical societies were present; Philadelphia has been designated as the birthplace of the American Medical Association. The Philadelphia General Hospital is world-famous.

The citizens of Philadelphia take pride in the fact that leading surgeons from all over the country have come here to discuss important problems in the field of surgery.

Dr. Edith MacBride-Dexter, Harrisburg, Pa.. After the Governor took his office, he made a tour of inspection of the state institutions and found that they had not had attention for a number of years; many of them were fire hazards. He immediately took steps for improvement. Then he created the General State Authority, with a building program of $65,000,000. Part of this sum is spent on state educational institutions, teachers' colleges and welfare institutions.

There are 10 surgical hospitals in the anthracite coal region; there are a dozen hospitals to care for the mentally ill, 1 hospital for epileptics and 2 for feebleminded children. There are 3 sanatoriums for tuberculosis patients and a hospital for crippled children. A new hospital is being built in western Pennsylvania, which will have 50 beds for patients with the adult type of tuberculosis and an annex for 50 children with the adult type of tuberculosis, a nurses' home and quarters for nonpatient and patient employees.

Edith MacBride-Dexter, M.D., Secretary of Health of the Commonwealth of Pennsylvania.

Mt. Alto was built about thirty-three years ago, with wooden type construction, with the expectation that tuberculosis would be a thing of the past in about twenty-five years. There is a cottage type for taking care of camp cases, and since we feel that tuberculous patients should be given bed rest, the institution is being practically rebuilt. There are 650 beds for adult patients, 50 beds for children who have the adult type of tuberculosis, a preventorium for 325 children, nurses' home and other necessary buildings.

At Hamburg accommodations are being built for 200 tuberculosis patients. The surgical unit there is unique in the United States. Dr. Behrend has charge of the surgery, and the structure is almost entirely of his planning. There are 2 modern operating rooms, an x-ray and beds for 38 patients. This [illegible] in use a year and a half.

After the building in western Pennsylvania is completed we intend to put in a surgical unit there. We are also putting one in at Mt. Alto.

Dr. Hunsicker has told of the surgeons in the past. In addition, I pay my respects to Dr. Behrend, to Dr. Chevalier Jackson, the outstanding man of the world in his specialty, and to Dr. Fraser, one of the noted brain specialists of the world. In the name of the Governor I extend greetings from the Commonwealth of Pennsylvania.

ANDRÉ CROTTI, M.D., *President, in the Chair*

GASTRECTOMY FOR VARIOUS CONDITIONS. DR. JOHN F. ERDMANN and DR. HAROLD E. CLARK, New York.

This paper appears in full elsewhere in this issue.

DISCUSSION

DR. JOHN J. GILBRIDE, Philadelphia: The stomach is the most frequent site of cancer. Of deaths from cancer in the United States for 1932 and 1933, 25,909 were reported to be due to cancer of the duodenum for 1932 and 26,565 for 1933. Cancer occurs but rarely in the duodenum, so these figures apply almost entirely to cancer of the stomach.

Great progress has been made in recent years in the diagnosis of cancer of the stomach as well as of cancer of other regions of the body. The outstanding factor in management is the late date at which patients suffering from stomach disease consult a physician for diagnosis and treatment. Many of those patients when they have so-called indigestion treat themselves by some preparation purchased in the drug store or mentioned over the radio. Persons who recommend over the radio or otherwise medicines for treatment of disease should be compelled to pass an examination by a state board of medical examiners.

The most frequent site of cancer of the stomach is the pylorus. This region is accessible for examination, and the disease when located here usually produces symptoms of obstruction comparatively early. When the disease invades the lesser curvature, the cardiac end or the fundus, diagnosis offers some difficulty because of the lateness of severe symptoms and the inaccessibility of the parts to physical and roentgen examination. I have seen and examined at autopsy 3 patients with cancer of the fundus of the stomach that had ulcerated through the diaphragm and produced abscess in the thoracic cavity; 7 with cancer of the stomach near the cardia were seen and examined at autopsy in whom there were slight or few symptoms of obstruction of the esophageal opening into the stomach. The cancer in 2 of these cases spread over the stomach wall in racemose form and revealed only waves of thickened mucous membrane.

The results of operation for cancer of the stomach, when the disease is mainly in the stomach, especially in the pyloric region, are good even in patients in whom the disease has extended to a lymph node near the pylorus or caused a slight nodule in the liver; radical operation may prolong life for one or more years.

In the treatment of cancer of the stomach one has to contend with months or years of delay before the diagnosis is made. Therefore every person with symptoms of indigestion not definitely assigned to other disease should consult a physician.

DR. BENJAMIN I. GOLDEN, Elkins, W. Va.: I wish to emphasize the value of the passing of the Levine tube. Within the past seventy-two hours I have seen three perforations, one occurring six weeks after an operation. For the past year my associates and I have passed the Levine tube and carried it through into the duodenum during operation.

It has always been a problem to me to start fluid into either the stomach or the intestinal tract. When the duodenal tube is in place one is able to start fluid intake earlier than without it. If the intestines are working and absorption is taking place, one is safe in passing fluids.

After passing a small amount of methylene blue and checking the kidneys by catheterization, if the methylene blue is found to have passed through the kidneys we know that the intestinal tract is acting in a normal physiologic way and therefore we feel safe in passing fluids into it. If methylene blue does not pass, we withhold fluids by mouth or through tube until such a time as it does. I believe that we have avoided many postoperative complications by this method.

DR. MAX THOREK, Chicago: One cannot always do a gastrectomy if the condition of the patient is precarious. Under those conditions we resort to surgical generalship, that is, doing as little as is consistent with the condition and safety of the patient. A Péan-Rydgier-Billroth II operation in its various modifications is resorted to.

A great deal has been written on the so-called oblique gastro-enterostomy. Prof. Alexander Stanischeff stated that with the methods used today there is no such thing as an oblique stoma resulting. He has devised a method which he calls gastro-enterostomia anterior oblique, which is simple and which is done by grasping the anterior wall of the stomach tangentially to the direction of the stomach and picking up about 20 cm. from the ligament of Treitz a loop of jejunum with a clamp, turning both clamps acutely and doing a gastrojejunostomy. When the clamps are released there is a vertical line which, after a time, proves to give a definite oblique stoma. Dr. Phil Thorek has experimented on animals and has proved that to be true. Thus with the Stanischeff procedure a true oblique jejunostomy opening is produced.

A potent factor stressed by Dr. Erdmann is the importance of the Jaboulay-Brown procedure, and it was gratifying to hear him say, "For safety's sake I do a jejunojejunostomy." Many a life has been lost, I feel, by neglecting the addition of a simple jejunojejunostomy of the Jaboulay-Brown type to the gastrojejunal anastomosis.

Dr. Erdmann stated that he is partial to silk as suture material, and it is interesting to know that the pendulum as to silk or catgut is rapidly swinging in favor of silk.

Motion Pictures of the Human Larynx: Surgical Significance in Normal and Abnormal States. Dr. William A. Lell, Philadelphia

This paper will appear in full in the following issue.

Extrapleural Thoracoplasty: Further Experiences with a Muscle-Splitting Operation. Dr Jerome R. Head, Chicago.

This paper will appear in full in the following issue.

P. Brooke Bland, M.D., *Acting Chairman*

DISCUSSION

Dr. Moses Behrend, Philadelphia: I believe the muscle-splitting operation is a step forward in the performance of thoracoplasty. We have not used it either in the Philadelphia General Hospital or at Hamburg, Pa., but I feel sure that with all the technical methods that prevent destruction of tissue it is an advance in the technic in performing any operation; therefore it ought to be used, and my associates and I will endeavor to use it in our work in thoracic surgery.

I was particularly pleased at the methods of removing the ribs that Dr. Head formulated in his pictures; the results speak for themselves.

Lesions of the Cranial Nerves. Dr Walter E. Dandy, Baltimore.

This paper appears in full elsewhere in this issue.

Thursday, Oct 13, 8 30 p m

Moses Behrend, M D, *General Chairman, Presiding*

Dr Charles H. Arnold, Secretary, read a letter from the library committee of the College of Surgeons of Philadelphia, inviting the members and guests of the International College of Surgeons to visit the library and museum.

Dr. Behrend spoke about the Transactions and announced the clinics to be held Friday morning and the banquet to be held Friday evening.

André Crotti, M.D., *President, in the Chair*

Differentiation Between Visceral and Parietal Pain in Surgical Diagnosis. Dr. William Bates, Philadelphia.

This paper will appear in full in the following issue.

DISCUSSION

Dr. Vincent A Lapenta, Indianapolis: We have all seen occasionally a patient who continued to have pain at regular intervals after the appendix was removed and who was found to have ileo-epigastric neuralgia of the twelfth nerve or intercostal neuralgia, and it was humiliating to see him cured by a few cubic centimeters of novocain given at varying intervals, or by a little neocaine, caffeine or an analgesic drug and some corrective exercise. So one can readily see the value of the method Dr. Bates has described, from both a diagnostic and a therapeutic standpoint.

Dr. T. F. Beveridge, Muscatine, Iowa: What effect do hypodermic injections of morphine have on the differential valuation of these symptoms? For instance, a physician often sends a patient with acute appendicitis to the hospital who has already been given a hypodermic injection of morphine.

Dr. William Bates, Philadelphia: I think administration of morphine before there has been an opportunity to make a differential diagnosis would be most confusing. Morphine relieves not only the visceral tenderness but also the sensitiveness of the superficial nerves. Novocain i much less dangerous preoperatively than mor phine, in a case of suspected appendicitis un one decides to operate The time for givi morphine is only after the patient has consent to the operation

Dr Henry M. Schiffr, New York: One not have to be reminded of the great given by injection into the spinal palatine cana glion through the posterior palatine cana the various pains referable to the sinuses, f region and any portion of the face An who has done a moderate amount of rhi work has noted that administration of 10 p cocaine on an applicator, pledget cotto through the nasal chamber, just . . .

terior tip of the middle turbinate, frequently gives a few minutes' relief of the pain; this measure applied frequently will help one make a differential diagnosis of conditions in any of the sinuses or in the nose.

Dr. George J. Miller, Brooklyn: Dr. Bates' method of differentiation would apply to an adult who can express himself and locate the ailment where he imagines he has it. I should like Dr. Bates to enlighten us as to how he would determine the same lesion in children on whom one is called to operate—those aged, 3, 2 or 1 year, or less, as in the case of an infant 2 days old on whom I operated and found appendicitis.

Dr. William Bates, Philadelphia: Dr. Miller has brought up a difficult phase of differentiation, one that has prevented therapeutic work from advancing with the diagnostic, because interpretation of pain is subjective, and to get the cooperation of an infant is difficult. But in certain cases the tenderness overlaps the area, and one can pick up areas off the region of the appendix, such as the buttock, the inside of the thigh and the area below the groin, which have different sensations on the two sides, even in young infants.

I do not advocate the injection of novocain. I depend on my attempt to differentiate the symptoms, and on the collateral signs of disease, which are sometimes slightly more marked in infants than in adults.

As far as adults are concerned, with this method of differentiation one has a further help, with which I hope to put tenderness in the objective column. If one has a patient who is sensitive to pinch and to poke and who states that he has pain in a certain place, and one finds tenderness in the same place on palpation, a thermoscope reading will show a lower temperature over the area of pain as compared with the opposite side. But if a patient has pain and does not have tenderness but says that he has tenderness, and if the thermoscope reading is the same as on the corresponding area on the opposite side where he does not claim to have tenderness, he is not telling the truth. The compensation board in Pennsylvania is beginning to take our word for this.

Moses Behrend, m.d., *General Chairman, Presiding*

Analysis of 537 Hysterectomies. Dr. James E. King, Buffalo.

This paper will appear in full in the following issue.

DISCUSSION

Dr. P. Brooke Bland, Philadelphia: A presentation of one's personal experience is interesting and constructive. It is an inventory of what one is or is not accomplishing and should be practiced more frequently. By it one is enabled to determine the presence of weak links in one's technic and take steps to correct them. But, more important, one is enabled thereby to determine both the immediate postoperative results and results that may occur some months or years later.

If I were to review my work regarding hysterectomy, my figures would almost parallel those quoted by Dr. King, except possibly the mortality. The figures he quoted with regard to that are the lowest I have heard or seen reported for a long time.

I know all the members were impressed with his reference to the character of the operations he performed. In the 537 hysterectomies, he resorted to the supravaginal operation 519 times. It is my custom also to do supravaginal hysterectomy whenever possible. I prefer it to complete hysterectomy because it is much easier to do, and I think that is the reason most surgeons prefer it.

Often I find some complication in the cervix—some condition complicating the fibroid tumor or whatever may be in the uterine body. I follow the same course practiced by Dr. King. If the cervix is extensively diseased, I do a complete hysterectomy. If the cervix is amenable to repair or to trachelectomy or cauterization, I precede the supravaginal hysterectomy by surgical repair or cauterization.

Dr. Peter Maras, Jersey City: I should like to ask Dr. King if he has a routine method of preparing his patients for that operation. I should also like to ask how often he has met with dehydration following his operation, and I am particularly interested in knowing what his postoperative routine is.

Dr. James E. King, Buffalo: Usually if a patient has any indication of a constitutional condition, we keep her in the hospital for two days before operation and study the blood and urine. Then, if required, we induce a sweat to open up the sweat glands (I am old-fashioned enough to believe in this). With such treatment I have never seen postoperative dehydration. An energetic resident physician usually has a needle in the patient's vein if there is danger of dehydration, and, while I do not believe in that, when the patient is not taking water or if there is any evidence of lack of fluid in the body, we always, of course, introduce fluid under the skin. Practically all the patients get water in some way.

My routine care after operation is mostly to leave the patient alone, and I think that is the best care she can get. One of my difficulties is with patients sent in by physicians, who usually wish to begin immediately to give the patient something to relieve her nausea or to give other drugs. The patient receives a little morphine, perhaps 1/6 or 1/4 grain (0.01 or 0.02 Gm.), and a little tincture of opium in the fluid given by rectum; she is given all she wishes to drink, usually orange juice, and the third day the bowels are moved. We do not have much trouble with such patients, mostly, I think, because we leave them alone.

Dr. Richard A Leonardo, Rochester, N Y.: It has been maintained that if the cervix is left, a certain percentage of patients after several years will develop carcinoma of the cervix, and that the ultimate mortality is lower if the stump is removed than if it is left. I should like to know Dr. King's opinion on that point.

Dr. James E. King, Buffalo: I do not believe in taking out every cervix. If a cervix looked carcinomatous I would not take it out but use radium. I have not mentioned any statistics here in regard to the number of patients treated after hysterectomy, but I think that for a woman who is well, younger than 60 and married, treatment is preferable to removal The cervix is a valuable organ, and it is surprising how much one can do to make it more normal by cauterization.

I have seen carcinoma in none of my cases. This does not mean that it has not occurred, because many times others see my cases. I have seen, I think, 5 or 6 carcinomas occurring in the cervical stump, one a year after hysterectomy, which means that this woman at the time of her operation had a carcinoma started.

Dr. André Crotti, Columbus, Ohio: There are two schools of thought in regard to hysterectomy—the supravaginal, which has been presented by Dr. King and by the discussion of Dr. Bland, and the abdominal

The reasons for the more extensive operation are many, the first, which has already been mentioned, being the danger of carcinoma of the stump of the cervix following the supravaginal procedure. I have seen 18 carcinomas of the stump. As I am the head of the Cancer Clinic at Columbus, I see patients coming for consultation who have been operated on by other surgeons, sometimes ten or fifteen years before, and I had 3 patients of my own in whom this occurred, at a time when I was indulging in supravaginal hysterectomy. I am rather partial to abdominal total hysterectomy (1) because of the incidence of carcinoma of the cervical stump after the supravaginal operation (2) because of the infection that may occur in the veins with the supravaginal procedure and (3) because a number of patients who have had supravaginal hysterectomy return with a discharge which demands one of the various cauterizations, hospitalization or office treatment, and especially conization, the coning out of the cervix, which means another operation Perhaps the mortality for the abdominal operation is a little higher than that for the supravaginal, but it is compensated by the lesser morbidity and by avoidance of later repercussions, complications such as infection or malignant disease. So perhaps if the two series were compared, all in all, everything would balance The operation of choice is, largely, I believe, a matter of individual temperament. I still feel much safer if I do an abdominal total hysterectomy—and that is what I do—unless the patient is a young girl who has never had children, in which case the supravaginal operation is better than a total hysterectomy.

Tests for carcinoma are unsatisfactory I have carried out in the clinic 500 or 600 tests, but only once did I discover incipient carcinoma as shown by test.

Dr. King alluded to a complication temperature, unexplained temperature, and discussed the possible causes. One that is often overlooked is a mild form of femoral phlebitis. In another complication occasionally observed about four, five, six or seven days after an abdominal operation, hysterectomy included, the patient shows a slight, gradual rise in temperature, maintained for several days. Auscultation of the chest, examination of the kidneys and other examinations give negative results. But an x-ray of the chest will show in one or both of the lungs a small, well localized pneumonic focus, and the roentgenogram is typical This lasts for three, four, five, six or seven days, then subsides and disappears.

Dr. Isaac Tractenberg, Brooklyn: Vaginal hysterectomy is, in the majority of cases, not an emergency operation. I believe that the cervix, if diseased, should be treated before hysterectomy is performed

In cases of erosion of the cervix I think that the erosion should be epithelized before any operation is performed. Since 1930 in a series of about 80 cases I have used supravaginal hysterectomy—and in every case I treated the cervix until it was thoroughly healed I coned out the cervix and used phenol and alcohol There were no deaths and no morbidity, and there was no discharge on follow-up of these patients

Surgery of Cancer of the Larynx; Malignant Tumors of the Larynx Dr. Gabrie Tucker, Philadelphia.

This paper will appear in fu[illegible] lat

DISCUSSION

Dr. Henry L. Picard, Philadelphia: Operations on the neck have several difficulties. One of these is the infection prone to occur when one opens the pharynx. This infection is likely to be obstructive. The second difficulty is the wall of the esophagus and pharynx, which is so tenuous that it easily breaks down; so a secondary fissure in the neck that could be closed after a while, when complicated with infection, may keep the patient in the hospital for a long period.

Dr. Tucker's method of subperichondrial extirpation of the larynx leaves much more tissue than surgeons have been accustomed to deal with and doubtless affords a much better barrier against infection; in those cases the condition has not extended to the superglottic region, has not involved the glands of the neck. This procedure would seem to have a great advantage.

Dr. Carl B. Sputh, Indianapolis: I should like to ask about upward x-ray treatment in the operation.

Dr. Gabriel Tucker, Philadelphia: In cases of cancer of malignant tumor of the larynx when we feel that there is no extension beyond the larynx we do not give radiation unless there is some evidence of gland enlargement. If that occurs later, the glands can still be removed. I believe that Dr. Barton, of the Mayo Clinic, was the first to suggest this; he said that even if there were glands in the neck it was well to take out the larynx first and remove the glands later. But we never give radiation unless there is tight growth.

Dr. Henry Scheer, New York: I should like to ask Dr. Tucker whether he has had occasion to use suction during the postoperative care. He probably knows how Dr. John MacKenty used to put in a counterdrainage incision at the side of the wound and insert small tubes, through which special measures and suction were applied. His associate, Dr. Brandon, has reduced the amount of counterdrainage with fewer suction tubes, but still uses suction postoperatively.

It is a revelation to be able to see a postoperative wound that requires so much less postoperative care, and I should like to inquire whether this procedure has been applied over a period sufficient to enable one to determine whether suction might be eliminated postoperatively.

Dr. Gabriel Tucker, Philadelphia: Little suction is required with drains. Dr. Brandon is responsible for the vertical incision. I had my early observation under Dr. MacKenty. We tried the cross-incision. Then I followed Dr. Brandon's method of the vertical incision, and the last step with this subperichondrial enucleation. My associates and I have used it for about ten years, but I have had the experience mentioned with the old technics. In fact, where the wound is sewed up several times, usually before final closure, we have put a tube all the way in the pharynx and used continuous suction to keep the saliva out while we were getting union in the repair. In the 4 patients we have treated in the last three months we have had no difficulty. One of these had extensive irradiation, and about six years after this treatment there was a recurrence in the larynx. We took out the larynx; there was some sloughing, and a fistula developed. But after the sloughing tissue came away, we sewed the wound together, and the first time the sutures held successfully. We did not have to put in any drains. The reason for that is that all the musculature is in the front of the neck. There is no tension, and when one brings the edges together they stay together. This method would be especially valuable for patients who have had recurrence following irradiation.

Friday, Oct. 14, 1:30 p. m.

André Crotti, m.d., *President, in the Chair*

PHARYNGEAL DIVERTICULUM: ONE STAGE RESECTION. DR. THOMAS A. SHALLOW, Philadelphia.

This paper appears in full elsewhere in this issue.

DISCUSSION

Dr. Charles H. Arnold, Lincoln, Neb.: Dr. Shallow has given a helpful discussion of treatment of a condition which is commoner than many believe. My associates and I have "stumbled onto" a number of these cases that have been overlooked by physicians, in which the condition had gone on for years until complications developed which I believe Dr. Shallow did not mention—the complications of bronchitis, which often develops in such cases and occurs through neglect and improper examination.

Dr. Shallow has made a valuable contribution in handling the condition through the one stage operation, because, as Dr. Crotti has well said, one does two stage operations sometimes to one's regret, because one is subjecting the patient to a double risk and prolonging his hospitalization. Another argument for the one stage operation is that the second operation in the two stage procedure is sometimes much more difficult than the first, owing to the fact that the sac is obstructed by the recently formed adhesions, and it is many times difficult to locate and recognize it, even when it is marked, as some surgeons have advised, by a stitch of black silk.

bladder was gangrenous and had perforated at one point, and it was apparent from study of the specimen that it was ready to perforate at several more points.

Dr. Max Thorek, Chicago: The question of cholecystectomy or cholecystostomy had its pendulum swinging vigorously a quarter of a century ago. Dr. Babcock will bear me out that thirty or thirty-five years ago when one went to medical society meetings the advocates of cholecystectomy and those of cholecystostomy were violent adherents of one or the other. It seems to me that the pendulum is now gradually gravitating to a central point, and that surgeons of mature judgment and experience do not suit the terminology to the scalpel but the condition of the patient to the modus operandi.

True, as Dr. Pate has stressed, the indications for cholecystectomy are different from those for ecystostomy. Unfortunately, at the present one finds in the literature expression of a endency to subject patients to cholecystectomy in the acute phases of gallbladder disease, as stressed by Dr. Cannaday. With all due respect for Dr. Cannaday's judgment, I am in unreserved opposition to that view, for the following reason. If one recalls the outline given ex cathedra to medical students fifty years ago, one finds teachings that read as follows. "Never permit the sun to set, when you diagnose acute appendicitis, without removing the appendix. Never permit the sun to rise, when you diagnose strangulated hernia, without relieving that strangulation. Always open the abdomen in the following conditions: perforated lesions of the gastro-intestinal tract, acute infections of the pancreas, acute injuries to the abdominal viscera, acute forms of appendicitis, acute forms of cholecystitis, acute forms of salpingitis" and a number of other conditions.

Comparing the views of 1938 with those of fifty years ago, what does one find? The aphorism that the appendix must be removed before sunset or sunrise in cases of acute appendicitis is as true today as it was then. The aphorism that in cases of strangulated hernia the constriction must be relieved immediately is also as true today, as is that on the necessity of entering the abdominal cavity in acute perforations of the viscera. In acute pancreatitis and a number of other conditions this also holds good. But in regard to acute salpingitis the aphorism is false, and it is not practiced in the vast majority of cholecystitides.

There are still some eminent surgeons like Dr. Cannaday who advise operation for acute cholecystitis. But the concensus in the literature is not in this direction. I treat acute cholecystitis, invariably, as I treat acute salpingitis: I put the patient in Fowler's position, apply an ice bag to the right hypochondrium and give a sedative. I do not say morphea, because we do not give this; we give nitroglycerin, nitrates, and so on. The mortality is lowered by this conservative treatment.

Dr. Pate stressed the need or the advisability of closing the abdomen tightly after classic cholecystectomy. Where does bile seepage come from? He stressed, I believe that ligation of the cystic duct is of paramount importance in avoiding bile leakage. That seems to be contradicted by Bakes, who showed in a series of 400 cases that if one does a classic cholecystectomy and ligates the cystic duct, in the majority of instances (I think it was 394 or 395 of the 400) there still will be found some bile on the dressing. Bakes concluded, justly, and this is in accordance with my findings, that this bile leakage is attributable to the gallbladder bed and is only rarely from the cystic duct. Of course, if one ligates the cystic duct so powerfully, or if the cystic duct is so infiltrated, that it is torn through, that is a different story.

Should one drain in clean cases? Of course, one can "get away with" omission of drainage. I have closed the abdomen after a classic cholecystectomy on some occasions, and nothing happened; but this is taking risks. As the late Lord Moynihan said, when asked why he drained his clean cholecystectomy cases, "Gentlemen, I don't see any other reason or any other explanation except to say that I call this a 'conscience' drain. My conscience won't bother me in case something goes wrong." Thus a cigaret drain is never going to hurt a patient and may save a life.

Dr. Frederick M. Douglass, Toledo, Ohio: Dr. Pate stressed that gallbladder disease is a disease of more than the gallbladder, that one must individualize each case. I am sure that each of the members here knows his own limitations, and his study of a case should guide him in the choice of procedure. To use a dogmatic procedure is a mistake in surgery of the gallbladder.

It must also be remembered that a large percentage of gallbladders perforate; probably 3 per cent of the gallbladders in a series observed by me have gone on to perforation. I believe that the acute case should be individualized, the patient prepared, and, at the surgeon's discretion, within from forty-eight to seventy-two hours, the procedure done. By individualizing these cases one will reduce the mortality and bring about the results that Dr. Pate wished.

Dr. Benjamin I. Golden, Elkins, W. Va.: An old dictum states: "Once an ulcer patient, always an ulcer patient." In the past few months I have heard several papers on the gallbladder. Each stressed the technical side. However, gall-tracts, particularly testosterone propionate, is receiving considerable clinical confirmation throughout the world. It is now definitely established that the follicle-stimulating hormone of the pituitary has the same effect in the male as it has in the female. In the male it affects the same types of cell, the seminiferous structures of the testicle, and the agglutinizing hormone affects the interstitial tissue. And the same effects of the follicle-stimulating hormone in bringing about growth of the uterine musculature is displayed in the prostate, giving rise first to diffuse hyperplasia and hypertrophy and later to adenomatous formation. The agglutinizing hormone, conversely, brings about regression of the adenomatous mass.

There is one objective measurement of the results of such treatment. the quantity of retained urine. This, I believe, is a direct measurement When one finds in cases of benign hypertrophy in which 150 or even 175 cc. of retained urine is measured immediately after careful urination, that retention is down to 15 or 20 cc. in three or four weeks and remains so, and that the patient instead of having to get up eight or nine times a night gets up only once or twice, this is objective evidence that the theory is sound. Of course, it cannot apply in cases in which the prostate has become fibroid, with adenomatous formation that has gone beyond the response of hormonal regression. Testosterone propionate acts by quieting the pituitary overfunction responsible for overproduction of the follicle-stimulating hormone that induces hypertrophy. This, I believe, is receiving considerable clinical confirmation by all who employ it in a sufficient number of cases with an open mind and with the objective measurement that I have mentioned —that of the retained urine.

Dr. David M. Davis, Philadelphia: I disagree with the previous speaker. The measurement of the residual urine is no index of real regression of the enlargement of the prostate. Residual urine changes tremendously in volume from time to time in the same individual, and may occur in normal individuals who have no enlargement of the prostate. It is an accurate measure of the degree of obstruction existing at the moment that the observation is made However, that degree of obstruction varies tremendously according to temporary changes in the size of the prostate induced by such factors as vascular congestion and edema.

Why Do Not Subcapital Fractures of the Hip Unite as Other Fractures? Dr. Fred H. Albee, New York

This paper appears in full elsewhere in this issue

DISCUSSION

Dr. W. E. Mowery, Salina, Kan.: Five years ago I said that the chapter on treatment of fracture of the hip would require rewriting. This has as yet not been done. I recently read an article which stated that Dr. J. Nicolaysen, of Oslo, Sweden, placed the first nail in a hip, so far as known, in 1879. Since then a great many different devices have been used.

I see more fractures of the hip today in young persons than I once did, largely on account of the greater number of automobile accidents. The mortality ranges from 10 to 20 or 50 per cent, depending on the age and condition of the patient.

Dr. Albee said that nonunion occurs in from 30 to 40 or 50 per cent of the cases and that the ligamentum teres is severed, with consequent necrosis of the head in 20 to 30 per cent of cases. At the outset one does not know which cases belong to this 20 or 30 per cent. Again, one does not know but that there may be additional blood supply to the head other than that afforded by the ligamentum teres.

In order to establish a working basis, one may classify fractures of the femoral neck into those just below the head (proximal or intracapsular), those through the center (intermediate), those through the distal end (basal) and those extending between the trochanters (intertrochanteric). *Sufficient emphasis has not been placed* on the difference in results in relation to the site of the fracture One need not worry so much about the intertrochanteric fractures or fractures at the distal end of the femoral neck, as in these union will always occur. I think it is wrong to subject weak patients to immediate operation in the hope that union will occur and that the head will not be absorbed, since patients in a state of shock cannot stand any type of major operation

A tremendous amount of harm results by not providing proper care of the patient during the first week or ten days of his recuperation. In order to make such patients more comfortable, in association with better nursing facilities one can apply a Thomas splint with Pearson knee flexion, using Kirchner wire and extension until the advisability of operation or other necessary treatment is determined Time alone can determine whether or not necrosis of the head of the femur is developing

I have used the bone peg on only three occasions On two of these there was absorption of the peg, with poor results, and on one there was bony union, with a good result

I feel that in order to get these patients out more quickly, especially if they are old, and back in their home surroundings, one is justified in using some kind of a nail. I realize that those used by Murphy and by Nicolaysen in 1879 were of a different type than are used today. The dye was not absorbed from the intestinal tract, liver damage may interfere with proper secretion of the dye, etc.

Gallbladder drainage is certainly preferable to removal in acutely ill patients and poor risks. I think we all agree that there is less risk in drainage, and the end-results, so far as cure or relief is concerned, compare favorably with those of cholecystectomy.

The mortality of operations on the gallbladder is about 2 per cent. Deaths from operation fall into three groups: (1) that with hemorrhage, shock, infection, pulmonary or cardiac conditions, etc. (about 0.9 per cent); (2) that with hepatic insufficiency, beginning about the sixth day; (3) that with high temperature, with coma, and death after forty-eight hours. The mortality in the so-called liver deaths is about 4 per cent of the total deaths.

I am particularly interested in the liver deaths. The liver function tests—the van den Bergh test, the amino-acid test and the carbohydrate tolerance test—are of questionable value. A low cholesterol content may indicate liver damage, but not always. Cholecystography is of no help in determining a damaged liver. On operation, the appearance and feel of the liver do not help one to foretell a liver death, and autopsy gives no information.

Dr. Thomas A. Shallow, Philadelphia: My experience with sulfanilamide has been so limited that I can draw no conclusions.

Dr. W. Wayne Babcock, Philadelphia: At one time I did cholecystectomy for acute gallbladder disease. The mortality was high. I turned to cholecystostomy, and I thought the results were better; but as time went on I found that I was having too high a mortality for cholecystostomy (up to 17 per cent). Then my associates and I discovered that when we took out the gallbladder during the first week of illness the patient usually lived, and that when we drained the gallbladder or took it out later than the first week, after infection had developed, higher mortality resulted.

We have been removing the gallbladder in the first week, and the results have been excellent. After the first week, or if there is evidence of infection around the gallbladder, a possible beginning abscess, we have come to be afraid of immediate drainage and do a stage operation We put a large glass chimney down against the gallbladder of a patient who has entered the hospital about nineteen days after the onset of an acute inflammation, with the omentum so plastered against the gallbladder that we realized that if we tore it off the gallbladder would probably rupture where it had perforated underneath. In three days we shall burn a hole through the glass tube and drain the bile, and a little later we shall take out the stones; if necessary, we shall take out the gallbladder at a later time, if the patient is not relieved or if we do not get all the stones out. So we think the problem of acute gallbladder disease is solved for us.

I have just come from a staff conference in which the question of preparing patients with jaundice for operations on the gallbladder arose. The preliminary administration of vitamin K with bile salt, and perhaps fats, was mentioned. This seems to be of value. Calcium and blood transfusions alone have not in the past given freedom from postoperative hemorrhage in all cases, as 1 patient in 30 with jaundice will bleed too much, and about 10 per cent of such patients have been dying despite the older remedies. I should like to ask Dr. Pate whether his experience with vitamin K has paralleled that of some of the physicians around here.

Another phase that has interested me is the colics that come on after removal of the gallbladder, which may be due to small stones, such as one does not find in the ducts. I have found it helpful to give the patients (I recall one woman, particularly, a morphine addict), certainly those with repeated frequent colic, 5 to 10 units of insulin twice a day. I have seen remarkable improvement and an apparent cure from this simple medication. Perhaps the results were brought about by changing the metabolism in the liver.

Like the other speakers, my associates and I drain the gallbladder, using a small rubber tube, which is pulled out the second day unless bile is flowing. For years we closed the incision tightly, unless there was some infection. Then we lost a patient on whom the operation seemed simple, from bile leakage; that was a lesson. The small tube does not always let one know that the patient has an internal hemorrhage or loss of bile, but I think it usually does, and, as has been said, it gives mental comfort.

Pathologic Basis for the Treatment of Prostatic Hypertrophy. Dr. David M. Davis, Philadelphia.

This paper appears in full elsewhere in this issue.

DISCUSSION

Dr. Vincent A. Lapenta, Indianapolis: The subject which Dr. Davis' paper brought up is of extreme importance because of the present popularity of the hormonal treatment. Everything that is so new in concept naturally will have to be carefully evaluated. The experimental work of Dr. McCullough on hypertrophy of the prostate in animals and the effects of testicular ex-easiest method is the one that is many times selected, and I wish to take issue with that attitude.

Apparently I did make the point that the head of the femur, when the fracture is through the central portion of the neck is essentially a joint mouse. If it is a joint mouse what chance does one have to put Kirshner's wires etc., through it and get it to unite to the shape of the bone?

I do not see how the type of metal is germane to the discussion. The point I made was that the treatment of the central portion of the neck of the femur should be based on three needs. The first requirement is mobilization. The kind of metal used has not much to do with that. But there are two other requirements perhaps equal in importance, namely, bringing a blood supply to the head of the femur, and bringing about bone growth—callus-forming capability—for the fracture junction.

The metal now used is better tolerated than that formerly used, in many instances, but it is a foreign body. I did a tremendous amount of work in the army, taking out pieces of shrapnel and other shells. I do not believe the metal nail is much different; whether it is covered with chrome plate or not, it stimulates infection and destroys tissues.

The difference between transtrochanteric fragments and fractures of the central portion of the neck of the femur has been mentioned. When there is a fracture through the trochanter, this unites, and one can put such fractures in the same classification as a fracture in the shaft of the bone lower down, or a fracture of the tibia. The fracture comes so that it splits the soft portion into two parts, one attached to the inner fragment, and the other to the outer fragment, and those soft parts serve as conducting scaffolds of blood supply to both fragments. But a fracture 2/3 to 3/4 inch (1.7 to 1.9 cm.) farther in would be completely within the hip joint, and the only possible source of blood supply would be from the ligamentum teres.

CLINICS

Thursday and Friday, October 13 and 14

Temple University Hospital Unit

General Surgical Clinics

Dr. G. Mason Astley: General surgical clinics, 10 to 12 a. m., October 13.

Dr. W. Wayne Babcock: General surgical clinics, 8 to 12 a. m., October 13 and 14.

Dr. John Royal Moore: Femoral shortening for equalization of length of lower extremities. Shelf operation for congenital dislocation of the hip. Anterior positioning for congenital dislocation of the hip. October 14 at Shriners' Hospital.

Dr. J. Norman Coombs: General surgical operations. Peritoneoscopy. 9 to 12 a. m., October 13 and 14.

Thoracic Surgery

Dr. W. Emory Burnett: Thoracic surgery, 10 to 12 a. m., October 13 and 14.

Dr. Louis Cohen: Clinic on compression therapy in pulmonary tuberculosis and demonstration of pneumothorax refills, fluoroscopy of pneumothorax patients, 9 to 12 a. m., October 13.

Gynecologic Surgery

Dr. Harry Duncan.

Rectal Surgery

Dr. Harry E. Bacon: Rectal clinic, 10:30 to 12 a. m.; operative clinic, 3 p. m., October 14.

Ophthalmologic Clinic

Dr. W. I. Lillie.
Dr. C. L. Jackson.

Otologic Clinic

Dr. Matthew S. Ersner: Otologic surgery, 2 to 4 p. m., October 13. Dry clinic, 2 to 4 p. m., October 14. Also, discussion: Surgery for the deaf (otosclerosis).

Jefferson Hospital Unit

Plastic Surgery

Dr. Warren B. Davis: Maxillo-facial surgery, 9 a. m., October 13.

Gynecologic Surgery

Dr. P. Brooke Bland: Plastic operations, 10 a. m., October 13.

Dr. Brooke M. Anspach: Treatment of myoma uteri, 11 a. m., October 13.

Genito-Urinary Surgery

Dr. David M. Davis: The importance of ureteral obstruction in urology, 12 a. m., October 13.

Radiology

Dr. Karl Kornblum: Some important considerations in cholecystography, 9:30 a. m., October 13.

Otologic

Dr. Horace J. Williams: One or two radical mastoidectomies, 10:30 a. m.

Orthopedic Clinic

Dr. Arthur J. Davidson: Orthopedic, 9 a. m., October 14.

improvement in steel with greater knowledge concerning the tolerance of tissue to various kinds of steel has made nails more useful. Today I saw Dr. Wayne Babcock sew the peritoneum with steel wire which he used throughout in the fascia and various layers of the abdominal wall. I do not believe that steel wire obtained thirty or forty years ago could have been thus used.

The Whitman treatment of extension, abduction and internal rotation necessitates placing the patient in a cast for weeks, which frequently he will not stand.

The nail that my associates and I have used in about 15 cases has been the Austin Moore type, selected because we felt that it would destroy less tissue and still hold the hip in good position.

As Dr. Albee has well said, one does not need many gadgets in order to nail these hips, once one gets bearings. By connecting the anterosuperior spine of the ilium and the symphysis pubis with an imaginary line, and intersecting its center, a valuable landmark is established. An incision is made over the greater trochanter. Just at its base will be found a small flat triangular space from which may be started a nail or drill directed upward toward the landmark established in the center of the intersected line. One will be surprised to find how frequently the drill or nail will be exactly in the center of the neck of the femur.

Dr. W. P. Sammons, Wheeling, W. Va.: Rupture of the ligamentum teres is difficult to diagnose. We often get good results without absorption of the head by Whitman's method and other methods of close reduction.

Dr. Albee sees hundreds of these fractures, whereas the general surgeon sees only a few. And it is a pity, as Dr. Scudder brought out a few years ago, that treatment of fractures of the hip, as well as some other fractures, has never been standardized. With the advent of the "machine age" and rapidly moving forces these fractures are increasing daily. The general surgeons of the small towns are receiving their quota of these fractures.

The technic of open reduction must be made so simple that the general surgeon can apply it. On a recent trip to the European clinics I visited Prof. Arthur Chance at Dr. Steven's Hospital in Dublin. Mr. Chance used Sven Johansson's method—a modification of Smith-Peterson's method with Johansson's complete equipment of special instruments. Mr. Chance, with the cooperation of the roentgenologist, made the operation of open reduction seem easy. I witnessed a similar technic in Böhler's clinic in Vienna. This was carried out without the special instruments of Johansson. Again, I saw Professor Noorden-

method similar to that of Dr. Albee. Noordenb made the statement that he had about 20 per ce failures due to absorption of the graft and the head. He keeps his patients in bed and in cast for three months. He further stated th he has seen refractures after four months.

In my locality (the Pittsburgh district) think that nailing, with Johansson's modificati of the Smith-Peterson nail, is simple and pra tical. Three to five Kirshner wires are drill into the head of the femur. Theoretically, t trauma of the numerous wires in the femor head will help the blood supply. A check of t position of the wires is made by x-ray while t patient is on the table. The most accurate wi as revealed by an anteroposterior and later x-ray view, is left in place; the others are r moved. We then drive Johansson's nail over t Kirshner wire as a guide. The fracture is i pacted by the final blow on the nail. A fin check is made by the x-ray before the patie leaves the operating room. Immobilization wi plaster is unnecessary. The patient can be in a chair in a few days, and six weeks in t hospital is the average stay.

We think this method is simple and practic in that it requires only the average hospit equipment and can be done rapidly by the gener surgeon of average skill.

Dr. Peter Maras, Jersey City: Dr. Albee h called attention to the fact that one cannot a complish a perfect result after the head of t femur is absorbed. He does, however, recor mend that when the tissue is fresh the res should be attempted.

One should be conservative. But what excu or explanation can one give for situations which a physician has done nothing, let the bo decay and then attributed the result to whatev struck his fancy? That is the reason for t poor results in some of the cases. So the fa should be stressed that repair is better done fi than last. One must consider the cost to i dustry, to say nothing of the disability to t patient.

Dr. Fred H. Albee, New York: I do n wish to go on record as opposed to "hardware but I do wish to make the point that if "har ware" is permissible for fractures other th that of the central portion of the neck of t femur, I do not believe it is permissible the except on rare occasions—in a very old case some similar instance.

It has been mentioned that it is easier to u metal than something that might be a little mo difficult. One does not apply that yardstick surgery of the gallbladder or to urologic pulmonary surgery these days. The main troub

In case of absence or nonexistence of the House of Delegates the Board of Trustees or the General Assembly shall constitute the [illegible] [illegible] organization of the College

The aforementioned resolutions were unanimously carried

The audited Reports of the Financial Statements of the College were read and unanimously approved and accepted

Election of International Officers Temporary Chairman Dr. Vincent A Lapenta appointed the following nominating committee: Dr. Julian C. Pate Tampa, Fla.; Dr Benjamin I. Golden, Elkins, W Va., Dr Charles H Arnold, Lincoln, Neb

The following were nominated and unanimously elected International President, Dr André Crotti, Columbus, Ohio, *International President Elect*, Dr. Fred H Albee, New York; *International Vice Presidents*, Prof. Rudolf Nissen, Istanbul, Turkey; Prof A Mario Dogliotti, Catania, Italy, Prof Alexander Stanischeff, Sofia, Bulgaria, *International Treasurer*, Dr. William Seaman Bainbridge, New York; *International Secretary General pro tem*, Dr. Max Thorek, Chicago, *Regional Secretaries General:* for Europe, Prof Dr. Albert Jentzer, Geneva, Switzerland, for Asia, Prof. J. C. McCracken, Peiping, China; for Mexico, Prof. Dr. Manuel Manzanilla, Mexico City; for India, Dr. M. M. Cruickshank, Bombay.

Board of Trustees: Drs. André Crotti, Fred H. Albee, Arnold Jirasek, Rudolf Nissen, Mario Dogliotti.

Other vacancies to be filled at the next meeting of the International body.

International Meeting. Following a discussion as to the place of meeting, it was decided by unanimous vote to meet in New York City, from May 21 to 25, 1939.

Adjournment

ASSEMBLY BANQUET

Friday, October 14, 7:30 p. m., Hotel Warwick

Dr. Moses Behrend presided as toastmaster, invocation being pronounced by Rev. E. A. E. Palmquist.

Dr. André Crotti delivered his presidential address and conferred degrees on the candidates. Dr. Wilmer Krusen was the speaker of the evening.

* * *

VISIT THE EXHIBITS, ROOSEVELT HOTEL

Stop for Refreshment

Surgeons visiting the International Assembly exhibits are invited to visit Booth 21 and enjoy a refreshing drink of Kalak Water. Ask the Kalak representative to explain the buffer value of Kalak, and how this delicious, sparkling, neutralizing water may be employed to add to the comfort of the surgical patient.

* * *

Holland - Rantos Features

Holland-Rantos products, the Koromex diaphragm and jelly, and their newer items, the H-R Emulsion jelly and Koromex diaphragm introducer, will be on display at convention Booth 29. Please be sure to call and get your complimentary copy of the "Physician's Guide."

J. Sklar Exhibit

The J. Sklar Manufacturing Company will exhibit in convention Booths 33, 34 and 35 new suction and pressure apparatus, including the Improved Tompkins Portable Rotary Compressor, the De Luxe Tompkins, the new Imperatori apparatus for ear, nose and throat work, Ralks' Ideal Unit and Moorhead Unit for office and clinic, and the new, improved heavy duty hospital model of the Bellevue Suction and Pressure Unit. They will also show their Stainless Steel Surgical Instruments, as well as Davidson's Pneumothorax Apparatus the Sorest Blood Transfuser, etc.

Obstetrics

Dr. Norris W. Vaux: Sodium amytal in controlling the convulsions of eclampsia. 10 a. m., October 14.

General Surgery

Dr. Thomas A. Shallow: Para-esophageal diaphragmatic hernia or carcinoma of the rectum. 11 a. m., October 14.

Ophthalmologic Clinic

Dr. Charles E. G. Shannon: Chronic simple glaucoma. 10:30 a. m., October 14.

Philadelphia General Hospital Clinic

Thoracic Surgery

Dr. Moses Behrend; Dr. Richard H. Meade, Jr.; Dr. Rubin Lewis; Dr. Albert Behrend: Extrapleural pneumothorax thoracoplasty, 9 to 10 a. m., October 13.

General Surgery

Dr. J. C. Howell: Carcinoma of the breast, 10 to 11 a. m., October 13.

Dr. L. K. Ferguson: Clinic on hernia surgery of lower rectum and anal canal. 11 to 12 a. m., October 13.

Dr. Hubley R. Owen: Dry clinic—fractures, 10 to 11 a. m., October 14.

Dr. P. A. McCarthy: Arterial surgery, 9 to 10 a. m., October 14.

Dr. William T. Lemmon: Diseases relieved by operation on hypogastric plexus, 11 to 12 a. m., October 14.

St. Lukes and Childrens Hospital Unit

General Surgery

Dr. D. Roman: Operations on the thyroid gland. Cancer of the colon. Cancer of the breast. 9 to 12 a. m., October 13 and 14.

Gynecologic Surgery

Dr. L. Averett: Vaginal hysterectomy. Plastic surgery. 9 to 12 a. m., October 13 and 14.

University Hospital Unit

Dr. E. L. Eliason, Director: General surgery.
Dr. I. S. Ravdin: General surgery.
Dr. A. Randall: Genito-urinary surgery.
Dr. F. E. Keene: Gynecologic surgery.
Dr. F. C. Grant: Neurosurgery.
Dr. Gabriel Tucker: Bronchoscopy.
Dr. George M. Coates: Otolaryngology.
Dr. A. Bruce Gill: General surgery.
Dr. L. K. Ferguson: General surgery.

Hahnemann College Unit

Dr. Earl Craig, Director: Gynecologic surgery.
Dr. G. Van Lennep: General surgery.
Dr. Leon Ashcraft: Genito-urinary surgery.
Dr. Thomas Doyle: General surgery.
Dr. Frank Nagle: Eye.

EXECUTIVE SESSION OF THE INTERNATIONAL COLLEGE OF SURGEONS

Abstract of the Minutes

Friday, Oct. 14, 5:00 p. m.

Constitution and By-Laws. The meeting was called in accordance with Article I, paragraph 3, page 15, of the statutes as registered in Bern and in the twenty-seven cantons of Geneva, Switzerland, by the Director General, to pass on the new Constitution for the International College of Surgeons, copies of which had been submitted to the entire membership. The votes received were practically unanimous.

A motion properly placed and seconded for ratification and adoption of the new Constitution and By-Laws was unanimously carried.

The following *Resolutions* were then introduced for consideration and vote:

Be It Resolved, That Article IX*c* of the present Constitution and By-Laws, presently adopted, in view of its ambiguity, shall read:

> *The International Officers shall be as follows: first, the International President; second, the International President Elect; third, the International Vice Presidents, three to five in number; fourth, the International Treasurer; fifth, the International Secretary General.*

That to Article IX*b* the following be added:

> *The world at large shall be divided into regions or continents, such as Europe, the Near East, Asia, the American Continents, etc.*
>
> *At the head of each region there shall be a Regional Secretary and Treasurer. The number of Regional Secretary-Treasurers shall be dictated by the needs of the moment.*
>
> *Article IXc: The governing bodies shall be, first, the House of Delegates; second, the Board of Trustees; third, the International Executive Council.*

Be It Further Resolved, That to the present statutes under Article IV, having as recognized specialties eleven enumerated, a twelfth be added, to be known as "Proctology."

Be It Further Resolved, That in Article XIII, *Executive Council,* paragraph 1, *the world "five" be substituted for the word "three" and the word "General" be substituted for the word "Executive."*

That to Article X, *Legislative Body of the International College of Surgeons,* immediately following paragraph 3*c*, paragraph 4 be added, to read as follows:

fellows of the College living in the district where these clinical groups function. When once these clinical groups will have been established the College will have become a world-wide teaching association comparable to none and thus will have complied with the implied meaning of the word *College*.

Indeed, the International College of Surgeons does not desire to have in its membership the outstanding surgeons of the world *alone*. This has been accomplished already by many worthy organizations. What the College wishes, besides and uppermost, is to have these outstanding surgeons of the world act as mentors and educators for the rising generations of surgeons, who, in turn, will some day be the leaders. And this is the distinguishing characteristic which marks the College as an association of surgeons different from any other.

Permit me, at this point, to emphasize that the International College of Surgeons is not a competitive organization. It has no antagonistic plan toward any of the already existing associations, national or international. On the contrary, it desires to cooperate with and further the educational efforts of already existing organizations. In this country, the International College of Surgeons stands solidly behind the American Medical Association and the American College of Surgeons. The College wants and urges its members to belong to any kind of and to as many already existing reputable surgical associations as desired. The more the better, so far as the College is concerned. The College is not jealous and has no fear. The College would feel that it is below its dignity to urge "*Sectionalism*" in surgery. The College feels that surgeons have at any time and at any place the right to organize themselves into a new Society, if they so desire, provided, of course, that their motives are above suspicion. To interfere with such a right is, in the opinion of the College, to interfere with *academic liberty*, which is, and has always been so dear to the medical profession. Such methods of interference would smack too much of "trade-union tactics." If the College is only too willing to respect the rights of others, it will in turn demand that its rights be respected also. And why should it not be so, since we are all striving unselfishly for the same goal, although in various ways?

Permit me to review with you what the United States Chapter of the International College of Surgeons has accomplished in the past two years.

Our present United States Chapter was organized in early December 1936. At that meeting I had the great honor of being elected President.

The hearts of the members attending the meeting were gladdened by the generous gift of Mrs. William Randolph Hearst, of New York City, who, through her friend Dr. Max Thorek, of Chicago, presented the College with a building to be used as a Museum for the College. This gift will become the property of the College only when the College becomes financially able to carry it. I take great pleasure at this time to assure Mrs. William Randolph Hearst that the College is profoundly grateful to her for her generous and friendly gesture.

Thanks to the efforts of Dr. Vincent Lapenta, Chairman of the Board of Trustees, the United States Chapter of the International College of Surgeons was incorporated according to the laws of the State of Illinois. This was done in the early part of 1937.

In the early part of June 1937, the first scientific meeting of the United States Chapter was held, in New York City. The General Chairman of the meeting, Dr. A. A. Berg, of New York City, and his very able and efficient committees made this meeting an outstanding one. It gave to the College an impetus which nothing else would have done. The presence [illegible] His E

PRESIDENTIAL ADDRESS

ANDRÉ CROTTI, M.D., F.A.C.S., F.I.C.S.

Retiring President of the United States Chapter of the International College of Surgeons

COLUMBUS, OHIO

In behalf of the International College of Surgeons, let me first extend to you all a hearty welcome. Especially, do I wish to assure the Philadelphia Committees, which have arranged this wonderful program for the second annual meeting of the United States Chapter of the International College of Surgeons, that it has incurred the most profound gratitude of the College. In this respect, Dr. Moses Behrend, who acted as General Chairman, is entitled to great credit for this splendid success. Aided by his various able committees he has organized a brilliant meeting that it will be long remembered.

We are indeed grateful to His Excellency, the Governor of the Great State of Pennsylvania, for his message of welcome transmitted to the College through his charming representative, Dr. Edith McBride-Dexter, Secretary of Health.

In behalf of the college, it is my duty and pleasure also to thank Dr. William Hunsicker, Director of Public Health, Philadelphia, representing the Honorable Mayor of the city of Philadelphia. He delivered to the College a most interesting review of the medical achievements of Philadelphia in the past history of medicine.

Also, I am desirous to assure the management of the Bellevue-Stratford Hotel that the College is grateful for all the kindnesses and efficient services received during the meeting.

Since I have the honor to address you as retiring President of the United States Chapter of the International College of Surgeons, permit to review with you what has been accomplished during the two years of my administration.

First of all, let me define once more what the College really is, and what it stands for.

As I said last year, in my Presic
address, the word *"College"* 1
school, work, study. *College* 1
teaching. It means imparting k
edge to its adherents. The idea
"loosely-jointed" organization,
meets only once in a while and
sight of its members during the in
is foreign to the idea of the Colleg
cause "*College*" means sustained c
with its various members not o
yearly intervals, but throughou
whole year.

Now, to those of you who hav
and read the first issue of the *Tr*
tions of the International Colle
Surgeons, and who have take
trouble to read the new Constitutic
By-Laws, it must be perfectly clea
these aims are to be attained.

Not only the bi-annual meetir
the General Assembly of the In
tional College of Surgeons, not or
annual meetings of the various
ters of the College, not only the
nual or multi-annual sectional me
in the various parts of a given co
not only the publications of the *T*
actions will be a means of sustaine
cational contact among the g
membership of the College, but w
that the goal to be obtained will b
ter secured by the formation of *C*
Groups or Guilds. In my last
presidential address I referred to
as organized postgraduate course
surgical clinics conducted at sp
intervals, at which the leaders will
some of the finer points of surgery
new Constitution refers to them n
Clinical Groups or Guilds.

These clinical groups are to be
lished in the various parts of a
country. Their number is unlimit
will be dictated by the needs of th
ment. Overcrowding of a clinical
is to be avoided, since this would
fere with its efficiency. Partici
in the activities of these various c
groups is compulsory for all the
ciate members, for the member

is the First Vice President of the International College of Surgeons. Professor Nissen ranks high among the greatest authorities in thoracic surgery. If the Turkish Kultus Ministerium is kind enough to grant this contemplated leave of absence to Professor Nissen, he will, under the auspices of the United States Chapter of the College, deliver throughout the United States a series of lectures and demonstrations on thoracic surgery. Thus the College intends to carry out its desire and to fulfil its mandate implied in the word "*College*," namely, to facilitate education and to impart knowledge.

Today marks the end of the Philadelphia meeting of the United States Chapter of the College. About its glowing success I need not speak. You are the judges.

This, gentlemen, constitutes a brief résumé of the major activities which have taken place during my incumbency of the presidential office for the last two years. Some of you may have wondered at times what your Council and its President were doing, since there were periods during which nothing was said or heard of the College. I want those who may have been anxious to rest assured that no respite was ever indulged in by your Council and its President. These silences were "*gestation*" silences. No one of you will ever suspect the amount of work, worry, and, at times, discouragement at the obstacles encountered both here and abroad, which your executive officers experienced. Had it not been for the loyalty, determination, enthusiasm and valiance of the United States Chapter Council, I would never have been able to report to you all the various accomplishments of which I have just spoken.

I wish you to know these accomplishments were obtained at the price of great personal sacrifices, financial and otherwise. I wish you to know also, that not only did the members of the Council not receive salaries, but most of them did not even receive a refund for the expenses incurred in the line of duty, such as traveling, office and secretarial expense, etc. Your President also was one of these. All this is said to assure you that all the money received by the College was devoted to the College alone.

Gentlemen, I feel that I am leaving to my successor, President Frederick Douglass of Toledo, a United States Chapter which is now established on a solid foundation. To be sure, much work remains to be done. In fact, the work has only just begun. I feel, however, and I sincerely hope the new President will experience much smoother sailing than it was my lot to experience.

Allow me to state that the two years which I have spent at the helm have been a great honor and privilege to me. I am thankful for having had this opportunity. I have learned much, and, although I am retiring now, I shall make it a duty to serve and help the United States Chapter to the best of my ability. To be sure, mistakes have been made, and I can but assure you that mistakes will still be made: we are only human beings. However, the mistakes made were of the head and not the heart.

Members and Fellows, please remain solidly aligned behind your new president. Let each one of you become an active proselyte for the College. If you do so, I can but see a great future for the College. Of course, the European situation being uncertain, the College may find itself retarded in its expansion in Europe, but not in the rest of the world. However, we must remember that man does not build for today alone, but builds also for the future; he does not build for himself alone, but builds also for the future of human welfare. In consequence, when the heavy sky of Nations will have cleared, the Colleg will find the road open and unhampered which will allow it to march proud toward its great goal.

Governor Lehman, of the State of New York, who made a special trip to come and open the meeting, did much towards that end. The July issue of the *Transactions* reports in full the activities of this meeting.

The meeting was concluded by the distribution of the College diploma to the fellows. In this diploma I have endeavored to embody the aims of the College and the guiding principles of its members. It is my fond hope that every member and every fellow will be always proud to possess it.

In February 1938 a meeting of the Southern states was held in Tampa, Fla., thanks to the untiring efforts of Dr. Julian C. Pate, of that city. The attendance was unusually large and the scientific program of high educational interest. This meeting was fully reported in the October issue of the *Transactions*.

At the Tampa meeting it was my privilege and pleasure to announce that the United States Chapter of the International College of Surgeons would award prizes for the best original study in thoracic surgery, in neurosurgery, and in otolaryngologic surgery. The prize for thoracic surgery will be $500; the prizes for neurosurgery and for otolaryngologic surgery will be each a diploma of merit. The July issue of the *Transactions* gives all the necessary information which the applicant may desire.

The original Constitution and By-Laws of the International College of Surgeons contained certain defects, which have hampered seriously the development of the College. It became evident that a complete revamping of this Constitution and By-Laws had become necessary. In consequence, in July 1938 I submitted a new Constitution and By-Laws to Dr. Hunt, Director General of the International College of Surgeons, who approved them, and who issued at once the call for the first Executive Session of the International General Assembly to take place at the present Philadelphia meeting. At the same time a copy of the new Constitution and By-Laws was sent to each member and fellow of the International College of Surgeons, together with a voting blank for approval or rejection. As you know, the new Constitution and By-Laws have been adopted not only by the majority of the members and fellows voting by mail and by the majority of the Committee of Direction, but also by the General Assembly in executive session here at Philadelphia in conjunction with the meeting of the United States Chapter. In consequence, some of the impediments produced by the old Constitution and By-Laws have thus been removed.

In July 1938 the first issue of the *Transactions of the International College of Surgeons* appeared. I regard the appearance of this publication as an epoch-making event in the history of the College.

The *Transactions* constitutes a certificate of birth and visibility that nothing can replace. No organization with the aims and aspirations such as the College has can do justice to its tasks without having an official organ to represent it and, *if need be, to defend it*. An official organ is a necessity. So far as the International College of Surgeons is concerned, this official organ is now the *Transactions of the International College of Surgeons*. Its able Editor-in-Chief is Dr. Max Thorek, of Chicago. All of you have received the first copy of the *Transactions*. I hope you will agree with me that it augurs well for the future of the College. I dream of the *Transactions* as promising to become one of the most important surgical publications in the world.

It will interest you to know that I have written to the Kultus Ministerium of Turkey requesting it to release from his teaching duties — this for only a few weeks — the celebrated thoracic surgeon Professor Rudolf Nissen, who

CONVENTION OF

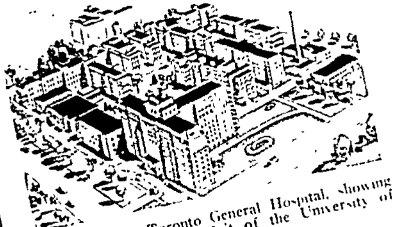
INTERNATIONAL HOSPITAL ASSOCIATION AND AMERICAN HOSPITAL ASSOCIATION,

TORONTO, CANADA

The sixth biennial congress of the *International Hospital Association*, Dr. Malcolm T. MacEachern, of Chicago, President, will be held in Toronto, Canada, September 19 to 23 at the Royal York Hotel. A comprehensive program has been arranged, which includes papers by eminent internationally known hospital authorities, reports of study groups, discussions, visits to local hospitals and places of interest, receptions and dinners for delegates and guests. An outstanding feature will be the system of interpretation; five basic languages—English, German, French, Spanish and Italian—will be used, and it will be possible for everyone to follow the reading of the papers and take part in the discussions.

Malcolm T. MacEachern, M.D., C.M., D.Sc., F.A.C.P., President, International Hospital Association

Immediately following this congress, the forty-first convention of the *American Hospital Association* and allied groups, including the *American College of Hospital Administrators*, the *National Association of Nurse Anesthetists*, the *Children's Hospital Association of America* and others, will take place at the same headquarters, from September 24 to 29. International delegates will be especially welcomed at the sessions. A large display of hospital equipment will be exhibited.



View of the Toronto General Hospital, showing the Medical Teaching Unit of the University of Toronto

The Canadian Pacific Railway has arranged a number of tours following the Congress, covering such representative hospital and industrial centers as Niagara Falls, Buffalo, Cleveland, Detroit, Chicago, the Mayo Clinic, Washington and Boston; all will terminate in New York City, providing an opportunity to visit the World's Fair.

For reservations and further particulars address the Secretary, Local Arrangements Committee, International Hospital Association and American Hospital Association conventions, Wellesley Hospital, Toronto, Canada.

BANQUET ADDRESS

WILMER H. KRUSEN, M.D., F.A.C.S.

Formerly (twice) Director of Public Health, City of Philadelphia; President, Philadelphia College of Pharmacy and Science

PHILADELPHIA

Dr. Krusen spoke on some aspects of modern surgery. He mentioned the unusual number of medical biographies and autobiographies published during the past decade, as exemplified by Arthur Hertzler's recent publication. Pennsylvania, he stated, is proud of the contributions of Chevalier Jackson and Victor Heiser.

Notable progress has been made recently in the fields of carcinoma, tuberculosis, diphtheria, typhoid and venereal diseases. In such progress tribute is due Parran. Yet the status of surgical knowledge is changing daily. What will the future be? "Whither medicine?" Dr. Krusen felt that he does not know as much now as when he was an intern, and he is less inclined to be positive and dogmatic now than then.

He stressed the following basic points in surgical practice: The patient is the prime consideration. Mental receptivity should be the surgeon's constant attitude, for neophobia is a virulent disease. Likewise, education of the laity is imperative, for without this the application of surgical knowledge would be limited.

In regard to medical education, the present compares favorably with the past. The modern system at home and abroad is well known and is in contrast to the former inadequate preliminary education, the two year course, the absence of hospital experience, and the crowded clinic, where the student saw the backs of the surgeon and his assistants. Yet a different form of graduate work is necessary to maintain progress, and there is special need for graduate work for older physicians. Also, some provision should be made for the son of poor parents who is studious and brilliant yet cannot afford a medical education in these expensive days.

The surgeon has often been erroneously thought of as a rather sadistic and unsympathetic person, averse to giving information as to the whys and wherefores of ihs actions and not properly appreciative of the cooperation of the internist, the x-ray specialist, the hematologist and others in aiding him to make a diagnosis. There is, in fact, need for cooperation not only among these specialties, but among all groups having similar aspirations: physicians, pharmacists, dentists, nurses, veterinarians, chemists, biologists, physicists, lawyers, ministers, journalists and teachers.

VISIT THE EXHIBITS, ROOSEVELT HOTEL

Sorenson's Surgical Apparatus

There will be on display in Booth 23 for inspection by surgeons visiting the International Assembly exhibits several new models of Rotary-Type Compressors covering all ear, nose and throat treatment requirements, as well as Vapor-Proof Ether and Suction Apparatus for use in tonsillectomy and adenoidectomy, together with aspirating apparatus for major surgery. Visits to this exhibit of C. M. Sorenson Co., Inc., will be appreciated.

Baumanometer to Be Featured

At Booth 36 of the International Assembly exhibits the W. A. Baum Company will show the latest KOMPAK Model Lifetime Baumanometer, with many exclusive features, including the completely recessed cartridge tube. The ever-popular desk and wall models will also be prominently displayed. A new one-piece rubber bulb made of highest quality Latex, another important improvement to the Baumanometer, will be awaiting your critical examination

Acousticon Invites Inspection

Acousticon extends a cordial invitation to all convention delegates to visit the exhibit at Booth 31. Here are demonstrated Acousticon's latest scientific achievements—the Coronation Acousticon and the recently introduced Crystalic Acousticon. The "Crystalic" is a wearable, portable vacuum tube hearing aid that brings patients all the volume and clarity required, without the slightest distortion. Acousticon will be glad to supply a colored chart of the ear to all interested doctors.

Electrical Hospital Equipment

An extensive line of hospital equipment will be displayed by the Prometheus Electric Corporation, of New York, in convention Booth 13. Many newly developed features and important improvements in design and construction of food conveyors, operating lights and sterilizing equipment will be shown. Visiting doctors interested in equipment for large and small hospitals should be sure to visit this interesting display.

Book Reviews

Die angeborenen Fehlbildungen der menschlichen Hand: Erb- und Konstitutionsbiologie der Hand.

By Prof Walther Muller. Price, 14 marks, bound, 15 50 marks Pp. 170, with 116 illustrations. Leipzig George Thieme, 1937.

THIS work is exhaustive in its completeness, and as one reads and enjoys the multiplicity of variations, one is continually impressed by the changes possible in extremity development. These changes are discussed and excellently illustrated, incorrect growth in the terminal phalanges of the fingers being considered first and then those variations in the bones proximal to and including the ulna and the radius, chest wall defects and the changes in the distal extremities The changes in the phalanges of the toes and those in the lower extremities themselves are also detailed with great exactness

Congenital malformations are carefully and systematically described along with the line of heredity, so that prognostications of the changes possible in the progeny of these deformed individuals can be accurately made. The illustrations are profuse and excellent, and the references are extensive so far as the German workers are concerned, but few references to English, French and American contributors are made. On the whole, this is a valuable work, but it would have a greater value if the Latin terminology were used more freely.

WILLIAM R. CUBBINS

Diseases of the Ear, Nose and Throat.

By Francis L Lederer, B Sc., M.D., F. A. C. S. Price, $10 Pp. 835, with nearly 500 illustrations and 16 color plates. Philadelphia: F. H. Davis Company, 1938.

THIS book is one of the most complete reference works that has been published. Owing to the form in which it is presented, it also will serve very well as a textbook. The volume is printed with double columns on each page, which adds considerably to reading comfort. Printed in small type is a great deal of material which is of interest to the practitioner but which may be omitted by the medical student.

The book is divided into five sections, the first four of which are prefaced by an anatomic description, with stress on the practical importance of the anatomy, rather than the didactic point of view. Each section is followed by a review of the physiologic features of the part considered, a subject usually slighted in otorhinolaryngology.

In the section on the ear, there is an excellent discussion of the complications of suppurative ear disease, including separate chapters on meningitis, labyrinthitis, brain abscess, the much-discussed petrositis, lateral sinus phlebitis, and facial paralysis. The second section treats of the diseases of the nose and nasal accessory sinuses. A section of discussion of sinus disease in general is followed by separate chapters on each of the sinuses. Cavernous sinus thrombosis, ostemyelitis of the skull, fracture of the sinuses, and the relationship of sinus disease to the eye are discussed in detail. In the section on diseases of the pharynx, there are chapters on diseases of the oral cavity, the tongue, the salivary apparatus and the palate. There is a chapter on the blood disturbances, including leukemia, granucytopenia, infectious mononeucleosis, pernicious anemia, polycythemia, and purpura; their manifestations in the oral cavity and pharynx are discussed. The fourth section considers the diseases of the larynx, trachea, bronchi and esophagus. The laryngeal section is most complete, with an entire chapter describing the surgery of that organ. The technic of endoscopy is given as well as a discussion of the chest diseases that are important from a bronchoscopic standpoint.

The fifth section is a correlation of the subject of ear, nose and throat diseases with general medicine. Diet, vitamin deficiency, protein shock and endocrine disorders are discussed. Swellings of the neck, facial neuralgias, disorders of speech and psychiatric aspects are described

There are almost 500 illustrations in this volume, including 16 color plates. Description of technics of ear, nose and throat operations which are accurate and easy to follow, are included in the text. This book has a definite value both as a general textbook and as a complete reference work for the general practitioner and the specialist.

FREDERIC J POLLOCK

PHILADELPHIA GUILD CLINIC OF THE INTERNATIONAL COLLEGE OF SURGEONS

The program of the **Philadelphia Guild Clinic** for Saturday, April 15, under the chairmanship of Dr. Moses Behrend, will be as follows:

8:30 to 10 a. m. University Hospital. Dr. I. S. Ravdin and Staff.
10:15 to 11:30 a. m. Hahnemann Hospital. Dr. Earl B. Craig and Staff.
11:45 to 1:15 p. m. Temple University Hospital. Dr. W. Wayne Babcock and Staff.
1:30 p. m. Luncheon.
2:00 to 3:45 p. m. Jewish Hospital. Dr. Moses Behrend and Staff.
4:30 to 6:00 p. m. Jefferson Hospital. Dr. P. Brooke Bland and Staff.
7:00 p. m. Dinner, Union League.
Review of Clinics.

The first congress of the **Societies of Endocrinology of the Little Entente** was held at Bucarest, Oct. 23 to 26, 1938. The following papers were read:

"The Corpus Luteum,"by Prof. Simonet, Paris.
"Virilism and Hirsutism in Women," by Prof. Charvat, Prague.
"Vitamin E and the Sexual Hormones," by Prof. Vacék, Prague.
"The Spleen as an Endocrine Gland," by Prof. Kostisch, Belgrade.
"The Thymus in Legal Medicine," by Prof. Minovici, Bucarest.
"The Mammary Gland," by Prof. Cristea Grigoriu, Cluj.
"The Suprarenal Glands," by Prof. Grădinesco, Cluj.
"The Epiphysis," by Prof. Parhon, Bucarest.

The **Northern Medical Association of Philadelphia** held its regular meeting Monday evening, Oct. 17, 1938, at the Hotel Majestic. The program was as follows:

"Indications for Sub-Total Gastrectomy in the Radical Cure of Gastric and Duodenal Ulcer," by Dr. A. A. Berg, New York. Dr. Wayne W. Babcock, commentator.
"The Pneumonias," by Jesse G. M. Bullowa, New York. Dr. Samuel Loewenberg, commentator.
"The Therapeutic Value of Sulfanilamide and Its Derivatives," by Dr. D. Sergeant Pepper, Dean of University of Pennsylvania Medical School. Dr. Nathan Blumberg, commentator.

At the one hundred and seventy-third annual meeting of the **Medical Society of New Jersey**, in Atlantic City, the **Section on Gastro-Enterology**, convening at the Haddon Hall Hotel, Thursday morning, June 8, will present the following program:

9:30. "Experiences in Diagnosis With the Peritoneoscope: Indications for Its Use," by Dr. C. Abbott Beling, of the Hospital of St. Barnabas and for Women and Children, Newark.
9:50. "The Treatment of Intestinal Obstruction With the Double-Barreled Intestinal Tube," by Dr. W. Osler Abbott, of the University of Pennsylvania.
10:30. "Diseases of the Blood Vessels as They Affect the Digestive Tract," by Dr. Stuart Z. Hawkes, of the Presbyterian Hospital, Newark.
11:00. "Functional Disorders of the Colon," by Dr. Sigurd Johnsen, of the Passaic General Hospital.
11:30. "The Constitutionally Inadequate Patient," by Dr. Walter Alvarez, of the Mayo Clinic.

The first annual meeting of the **Association for Traumatic Surgery** will be held at Hot Springs, Va., May 8 and 9. The president is Dr. Kellogg Speed, Chicago; the secretary Dr. Ralph Carothers, Cincinnati.

The **American Urological Association** will convene at White Sulphur Springs, W. Va., May 29 to June 1. The president is Dr. Edgar G. Ballenger, Atlanta, Ga., the secretary Dr. Clyde L. Deming, New Haven, Conn.

The **Milwaukee Society of Clinical Surgery** met January 24, the following program being presented: "The Science of Surgery," by Dr. William J. Carson, retiring president; "Nupercaine Spinal Anesthesia in General Surgery," by Dr. Karl Schlaepfer, president elect (discussion by Dr. Millard Tufts); "Gastrectomy—Results in Ten Consecutive Cases Ten Years After Operation," by Dr. L. W. Hipke.

Dr. Anthony Bassler addressed the **New York Physicians—Yorkville Medical Society** on Wednesday, Nov. 23, 1938, his subject being "Man—the Known." At the same meeting Dr. William Seaman spoke on "Tumor Formations in the Mineral, Vegetable and Animal Kingdoms."

SURGEONS ARE INVITED TO ATTEND THE ASSEMBLY
OF THE INTERNATIONAL COLLEGE OF SURGEONS,
NEW YORK CITY, MAY 21 TO 25, ROOSEVELT HOTEL

tropical dysentery and colitis and their surgical complications, liver abscess, [illegible] adequately [illegible] nonperforative peritonitis [illegible] presented. The authors call attention to the [illegible] which [illegible] metastatic localization of the ameba [illegible] result in bronchopulmonary, pleuritic [illegible] encephalic, splenic, perinephritic or osteoarticular amebiasis. The chapter on liver abscess and the treatment thereof is a classic. Thirty pages are devoted to the description, evolution, pathologic anatomy and treatment of elephantiasis arabum. This chapter is profusely illustrated, and one cannot fail to have a clear conception of this disease, its ravages and its surgical treatment after having attentively looked at and studied the graphs, charts, diagrams and photographs that accompany it. The evolution of surgical tuberculosis in the Negro is presented in a masterly fashion, and with its numerous illustrations this section constitutes one of the most interesting of the book. Bilharziasis, yaws, phlebitic funiculitis, filariasis, brucellosis, each and all are excellently presented.

The style is clear, concise and authoritative. The illustrations are well selected. Having this book at hand will enable the medical practitioner to handle confidently and expeditiously many of the complaints that occur in tropical and semitropical countries. This book will be appreciated for the valuable information it contains.

Aimé Paul Heineck.

Surgery of the Esophagus. By Prof. Dr. Raymond Grégoire. Price, 35 francs. Pp. 180, with illustrations. Paris: Masson & Cie, 1935.

THIS volume is an exposition of the present-day aspects of esophageal surgery.

In recent years there has been much progress in the recognition and treatment of diseases of the esophagus; radiology and endoscopy have thrown much light on the subject. These means of exploration have made it possible to observe many conditions previously only imperfectly known, and in the course of the last thirty years many new surgical operative methods have been devised.

Grégoire treats the subject thoroughly; his book includes chapters on gastric-esophageal ulcer, on diverticula of the esophagus, on megaesophagus, on esophageal foreign bodies, on the surgery of esophageal cancer and on the newer methods of approach to the region.

Thorek.

Die Verletzte Hand: Behandlung und Behandlungsergebnisse der Finger-und Handverletzungen und Infektionen. By Dr. Karl Kromer, Assistant, Unfallkrankenhaus, Vienna. With a foreword by Prof. L. Bohler. Price, 36 marks. Pp. 288, with 530 illustrations and 82 tables. Vienna: Wilhelm Maudrich, 1938.

WITH evident study and care, from a source of traumatic surgery which has become world-renowned, the author has divided the treatment of injuries and infections of the hand into three major groups, namely, the treatment of fresh open finger and hand infections, the treatment of acute inflammatory processes and the treatment of fresh closed finger and hand injuries. The indications and methods of nonoperative and operative treatment, and the management of foreign bodies, crushing injuries and burns are logically described. In the chapter on fractures of the phalanges, metacarpals and carpals, the finer points as well as the general management are discussed. The importance of active movement of the noninjured parts is stressed. The systematic conservative and radical treatment of the chronic edematous fibrosed hand is described. The second part of the book deals with end-results of the various types of finger and hand injuries and infections.

The book is systematically arranged and well illustrated with photographs, roentgenograms, sketches and charts, and the bibliography covers the subject matter comprehensively.

Daniel H. Levinthal.

Modern Surgical Technique. By Max Thorek, M.D., Prof. Clinical Surgery, Cook County Graduate School of Medicine; Attending Surgeon, Cook County Hospital; Surgeon-in-Chief, the American Hospital; Consulting Surgeon, Municipal Tuberculosis Sanitarium. Price $33. Pp 2,045, with 2,174 illustrations. Philadelphia: J. B. Lippincott Company, 1938.

THE author of this work needs no introduction to the surgical world. Besides being a master of surgical technic, his long and fruitful clinical experience and numerous contributions to surgical literature entitle him to speak with authority on surgical problems, and one feels that he is exceptionally qualified to present a treatise on modern surgical technic.

These three volumes fill a long felt need. They will appeal to the well trained surgeon, who not infrequently feels the need of a rapid and authoritative survey of specific points of technic, as well as to the less experienced surgeon, who

Die Röntgentiefentherapie. By Hans Holfelder and others. Price, bound, $11.60. Pp. 341, with 265 illustrations. Leipzig, Georg Thieme, 1938.

THE principal objects of radiation therapy in cancer are discussed by Holfelder. Killing the cancer cells without concomitant irreparable injuring of the normal cells within the radiation beam is the important requirement in radiation treatment for malignant tumors. This is attained by limitation of the mass of the irradiated tissues, by the use of tube compression to bring the radiation beam as close as possible to the tumor cell; by the number and size of fields; by an accurate centering of the beam onto the tumor; by the determination of the doses effective in the tumor; by the selection of the size of the fraction doses; by the time duration and spacing of the single spaced dose; by the intensity of the outflow in r minutes, whether protracted, normal or concentrated; by the determination of the voltage, the filter and the half value layer, and by the medical care before, during and after radiation treatment.

Bemm discusses the physical foundations of measuring roentgen rays by the use of the r dose meters. He discusses the definition of the international r unit, the methods of measuring, and the standardization of the instrument.

The microscopic changes in the tumor cells and the normal tissues are presented by Englman. The microscopic studies of the cell changes evince a multiplicity of reactions. Consecutive biopsies of cauliflower cancers of the uterine cervix permit the best study of the cell changes. He describes the variation in reactions caused (1) by lethal and sublethal doses applied in one sitting, and (2) by the method of application, namely, the single massive dose, the fractionated spaced dose given with either a slow, an average or a concentrated outflow. It would lead too far to give a detailed finding in a book review.

Reisner discusses the skin erythema as the standard for the determination of the tolerance dose applied in a single sitting and the influence of fractionation and the rate of recovery of the normal tissues, assuming that the action is cumulative in the biologically inferior cancer cell. The influence of the field size, of the radiation quality, and of time duration of application of the fraction dose is demonstrated. Finally the skin erythema dose produced by the Frankfurt technic of irradiation is given. The rate of recovery is the basis for the determination of the total dose, and the length of intervals between fractions.

Holfelder gives in the next chapter the spaced doses and technics of his method for each region and organ of the body in fourteen tables, illustrating the application of the radiation beams for each table.

The medical treatment of the patient during and after irradiation is described by Weisswange, the care of the irradiated skin and mucous membranes by Reisner, and the legal interpretation and treatment of radiation injuries by Holfelder.

Teschendorf presents the chapter on the influence of roentgen treatment on the offspring. The principles of genetics are discussed, and on these are based the conclusions prevailing in central Europe today in relation to diagnostic and therapeutic applications. The germ plasma must be kept absolutely pure and undamaged, as it is the most highly prized possession of a nation or a race. Hence ovarian irradiations should always cause permanent cessation of ovulation to avoid insemination of an ovum having damaged genes. All unnecessary diagnostic or therapeutic applications to the germ cells should be prevented.

The second part offers a detailed discussion of the clinic and treatment of tumors of the skin, the tongue, the brain, the breast, the bronchi, the esophagus, the stomach, the pelvic organs, the bones, the thyroid and the lungs. The significance and treatment of radiation indurations of the lungs are discussed by Teschendorf, and the roentgen treatment of bronchial asthma is given by Bauer.

The review has been a treat. A perusal of the monograph will be profitable to the physicist, the radiation therapist, the oncologist and the surgeon. The thoroughness and exactness of the presentation make it a valuable contribution to the radiologic, surgical and pathologic literature. The illustrations are clear and enhance the text.

HENRY SCHMITZ.

Clinique chirurgicale des pays chauds. By Botreau-Roussel, M.D., director of the school of application of the health service of the colonial troops, Pharo. With the collaboration of Profs. Assali, Dejou, Huard, Montagné, Palès and Roques. Price, 80 francs. Pp. 336, with illustrations. Paris: Masson & Cie, 1938.

In this volume one finds a practical and scientific discussion—one could truthfully say, a superexcellent analysis—of the etiology, pathology, symptomatology and also the medical and surgical treatment of the diseases that prevail in tropical and semitropical regions. The chapters on choice and evaluation of treatment are exceptionally valuable. In them are clearly stated what procedure is best for the patient. In this volume are found the study of such clinical entities as the various surgical conditions that complicate malarial infection and the treatment indicated for each manifestation. Amebiasis, 1933 and June 1937. Among these were fifty with fresh fractures, in all of whom bony union was obtained. The remaining twenty-eight cases were those of delayed union and pseudarthrosis; in this group, 90 per cent of the patients secured bony union. The authors believe, and their results seem to prove, that this method of treatment will always result in bony union with good function provided the cases are properly selected and the technic meticulously followed.

The authors differ in opinion from many contemporary authors regarding the value of securing a reduction with the femoral neck in the valgus position. Böhler and Jeschke believe that this must be avoided, since it will result in necrosis of the femural head and subsequent arthritis.

The subject is presented in a clear and systematic fashion; the illustrations and the reproductions of the roentgenograms are clear. This book will prove of great value to all those who treat fractures. It might be suggested that for the sake of completeness in future editions a final chapter be added, dealing with reconstructive operations for the types of cases in which the nailing operation is contraindicated.

DANIEL H LEVINTHAL.

Demonstrations of Physical Signs in Clinical Surgery.

By Hamilton Bailey, F.R.C.S. (Eng) Sixth edition. Price, $6 50 Pp. 284, with 358 illustrations Baltimore · William Wood & Company, 1937.

THIS book was originally written as an antidote to the growing tendency in modern medical and surgical practice to rely upon laboratory investigations and other auxiliary reports for a diagnosis The author is of the opinion that the patient's history and physical methods of examination must always remain the main channels by which a diagnosis must be arrived at, an opinion with which the reviewer is in complete agreement.

In the twenty-five concise chapters which make up this handy volume the author considers the main regions of the body and the contained important organs and discusses the principal physical signs which point to pathologic conditions, especially those which call for surgical therapy

That practitioners have found the work of clinical value is proved by the fact that it has now reached a sixth edition. The text has been thoroughly revised. While all chapters will be found of great practical importance, the reviewer is particularly struck with those dealing with the elicitation of signs in the thorax abdomen and the genito-urinary organs This manual can be heartily recommended to young practitioners on account of the simplicity of expression, the plentitude of excellent illustrations and the fact that it gives ample evidence of practical everyday diagnostic experience of a surgeon with wide opportunities of judging what should be looked for in the examination of a patient.

THORCK.

Fractures and Dislocations for Practitioners.

By Edwin O. Geckeler, M.D. Price, $4. Pp. 252, with 213 illustrations. Baltimore: *William Wood & Company, 1937.*

THE author desired to make this book "a complete, yet simplified, guide to the management of bone and joint injuries," by condensing "the subject of fractures and dislocations without the omission of important details" He realizes that "elaborate equipment and complicated technic do not of themselves produce success" but that "the intelligent use of general principles" brings about, for the most part, satisfactory results. The increasing frequency and severity of highway accidents call for detailed information and exceptional skill on the part of physicians. Hence the author selects only the one most practicable method for a given emergency condition confronting the doctor, who is thus saved time and hesitation; operative technic has been limited to description of skeletal traction and subcutaneous leverage; the importance of follow-up treatment, however, has not been sacrificed to high-pressure conditions.

In the table of contents one notes the strength of chapter titles evidenced merely by omitting such specifying articles as "a," "an" or "the," thus, "Bones of Skull and Face," "Hand," "Foot," "Vertebrae," and so on. An individual *Clavicle* or *Shoulder Joint* might be safer in the care of one who knows them stark and singly for the population at large. There are 32 such chapters, apportioned between "Part One. Fractures" and "Part Two. Dislocations."

The illustrations are almost as numerous as the pages, they have been reproduced from radiographs, photographs, diagrams, hand-done sketches The style is direct, clear and authoritative. With the substantial binding with double-stitched paging—so it obeys the will of the user —the heavily glazed paper, necessary for the generosity of illustration, this book might go intact through a war.

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ANDRE CROTTI

Lezioni di clinico medico. By Cesare Frugoni. Price, 60 lire. Pp. 606, with 46 illustrations. Rome: Luigi Pozzi, 1934.

ALTHOUGH published a few years ago, this book has lost none of its value.

Professor Frugoni cites recent advances in clinical medicine, and then, in each of twenty-seven chapters, discusses a particular recognized clinical syndrome. In each condition all the aids of modern science are brought to bear to arrive at the diagnosis. A case is postulated, and the patient's history, symptoms and signs, the results of physical examination, the laboratory findings, and the knowledge furnished by special procedures, such as x-ray examination, are detailed. After full consideration of the case, the means of arriving at a diagnosis is explained. Thus each case is a problem to be solved by application of the various adjuncts of modern medicine. This method of arriving at a diagnosis—proceeding from à priori facts to a conclusion—distinguishes the scientific method, and is in contrast to observations less exactly made and less scrupulously analyzed.

Thus the book serves not only as an exposition of clinical syndromes but as a guide in application of all utilizable methods to the understanding of any syndrome. It pleases by the directness and clarity of its style and the orderliness of its approach no less than by the value of the collected and synthesized data.

THOREK.

Operative Behandlung der Schenkelhalsbrüche und Schenkelhalspseudarthrosen und ihre Ergebnisse. By Dr. Lorenz Böhler, Director, Unfallkrankenhaus, Vienna, A.O. Professor of Surgery, University of Vienna, and Dr. Wilhelm Jeschke. Price, 32 marks. Pp. 201, with 533 illustrations. Vienna: Wilhelm Maudrich, 1938.

DURING this era of metallic fixation of fractures of the neck of the femur with open and blind nailing, pins, screws, three flanged nails, two flanged nails, with and without guide wires, bone pegs, etc., it is timely to read the technic of treatment by this well known author and the presentation of end-results by his associate. Their book describes in great detail the use of a modified Sven Johansson nail inserted blindly across the neck of the femur in the treatment of fresh fractures, delayed union or nonunion. The presentation is based on a series of seventy-eight patients treated between March

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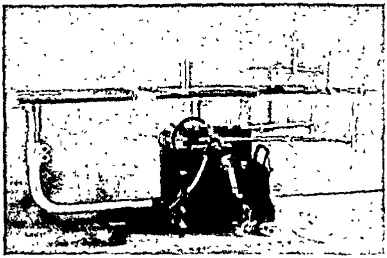

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Cranio-Cerebral Injuries. By Donald Munro, M.D. Price, $4. Pp. 393, with 62 illustrations. New York: Oxford University Press, 1938.

THIS book crystallizes present-day treatment of craniocerebral injuries. There are many excellent chapters. To understand completely what may occur, "fundamental cerebral physio-pathology" is discussed. It is only by understanding these processes that one can adequately treat brain injury.

Perhaps one of the best chapters is that on general principles of treatment. Here the author strives to present, successfully, a picture of therapy on a physiopathologic basis. He pleads for the physician to think not in terms of "concussion" or "fracture of the skull" but on the basis of an upset in the normal function and of the pathologic changes resulting from the injuries sustained. Thus the physician will be sufficiently equipped, mentally, to carry out satisfactory treatment.

The author later discusses a schedule for those convalescing from craniocerebral injuries. Other subjects considered are roentgenography (indications and contraindications), nonoperative and operative methods of treatment, complications due to necessary treatment and differential diagnosis. Not of least value is the section on first aid.

One can find fault with the chapter on craniocerebral injuries of the new-born. This is the only section that is inadequate.

On the whole, the book is well worth while, and all physicians can read it with profit.

XAM.

* * *

VISIT THE EXHIBITS, ROOSEVELT HOTEL

Lea & Febiger Publications

Among the new books which Lea & Febiger will exhibit at convention Booth 32 are Stimson's "Fractures and Dislocations," Miller's "Applied Anatomy," Cowan's "Refraction of the Eye," Schlanser's "Practical Otology, Rhinology and Laryngology," Brenner's "Pediatric Surgery" and Thorndike's "Athletic Injuries." New editions of several outstanding recent medical books will also be shown.

* * *

Lippincott Medical Books

The Lippincott display of new and important medical books in Booth 3 of the International Assembly exhibits will include the second printing of Thorek's "Modern Surgical Technique." This superb work was reprinted within five months of its publication. *The Journal of the Amedican Medical Association* states: "If it is possible to write a 'stream-lined' modern version of surgical procedure and art, this three volume edition comes close to the mark."

From Saunders Company

Of particular interest in the exhibit of the W. B. Saunders Company at convention Booth 19 are the following new books and new editions: Callander's "Surgical Anatomy," Scudder's "Fractures," Cutler's "Cancer," Morrison on "Nose, Throat and Ear," Beck's "Hematologic Technic," Norris and Landis' "Chest Diagnosis," Body's "Surgical Pathology," Reimann's "The Pneumonias," Barsky's "Plastic Surgery," De Lee's "Obstetrics," the "American Illustrated Medical Dictionary," the "Mayo Clinic Volume," Murphy's "Anemias in Practice," Wolf's "Endocrinology," Cantarow and Trumper's "Clinical Biochemistry," Fluhmann's "Menstrual Disorders," Pelouze on "Gonorrhea," Mallory's "Pathological Technique," Crile's "Surgical Treatment of Hypertension," Andrews' "Dermatology," Beckman's "Treatment," Curtis' "Gynecology."

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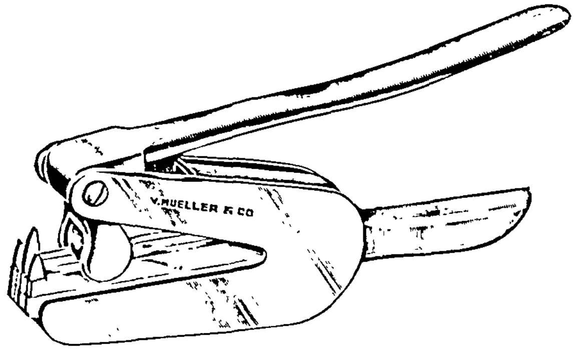

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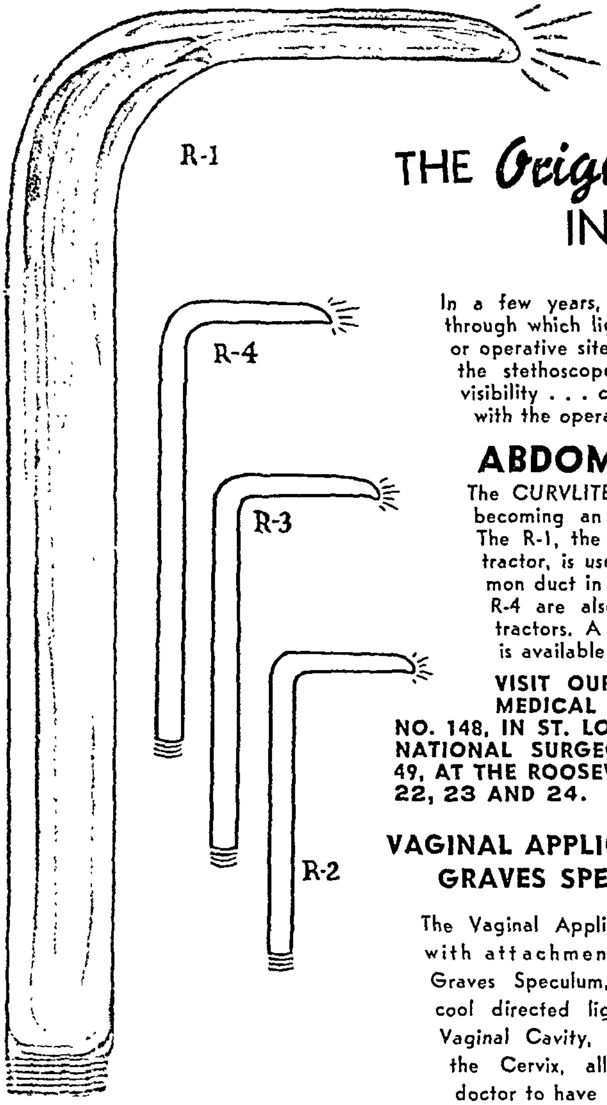

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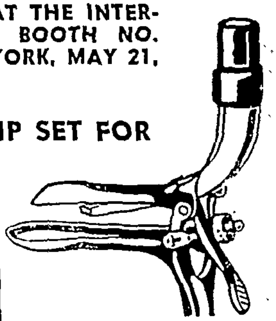

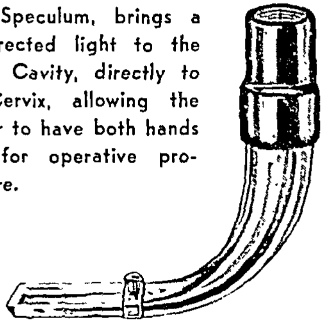

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JUNE 1939

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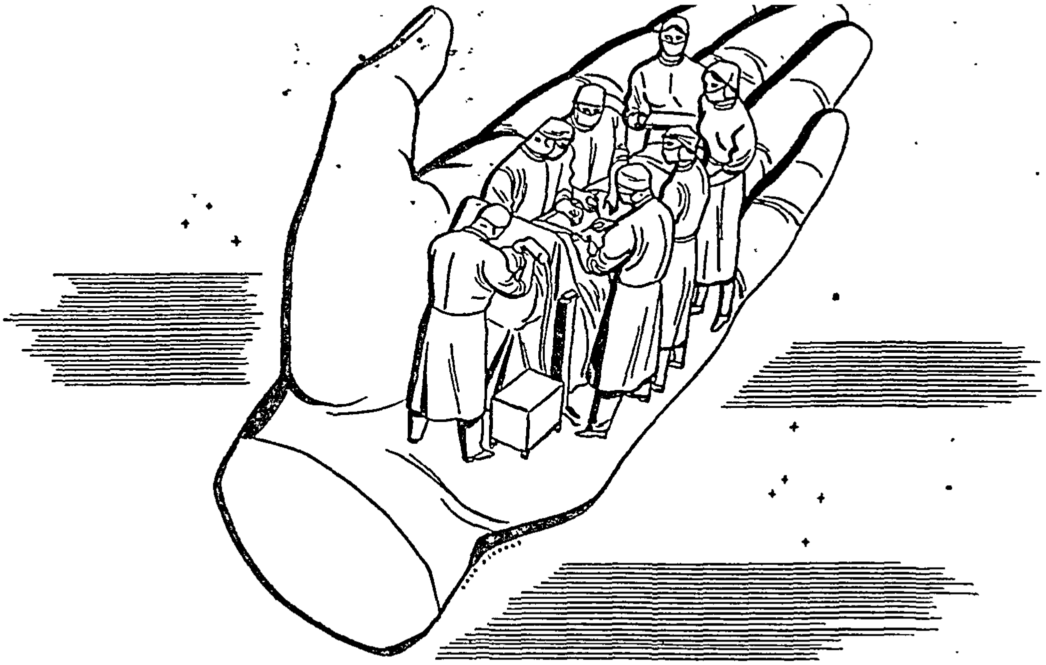

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*Meyer E., and Arnold L.; Amer. Jour. Digest. Dis.; v.5, p.418, September, 1938

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Two carbon copies should accompany the original paper. A summary must be given at the end of the article.

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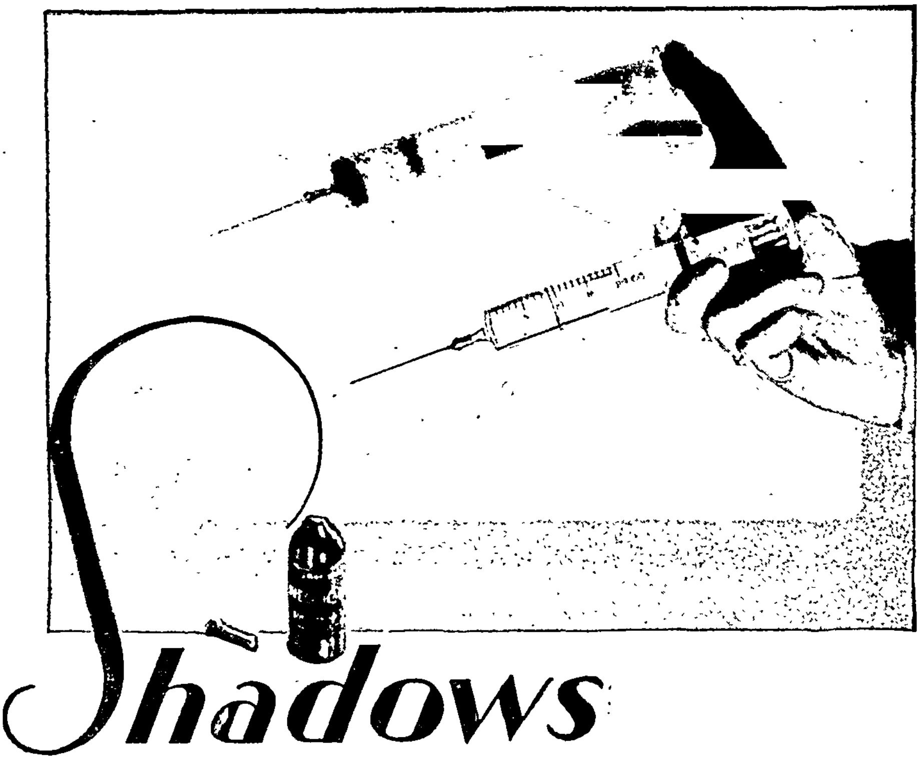
Anonymous contributions of any and all sorts will not be published.



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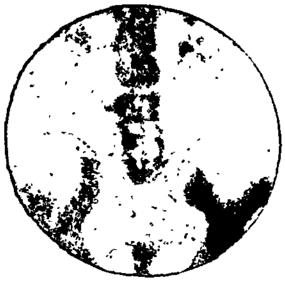

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SCHERING CORPORATION BLOOMFIELD, N.J.

Editorials

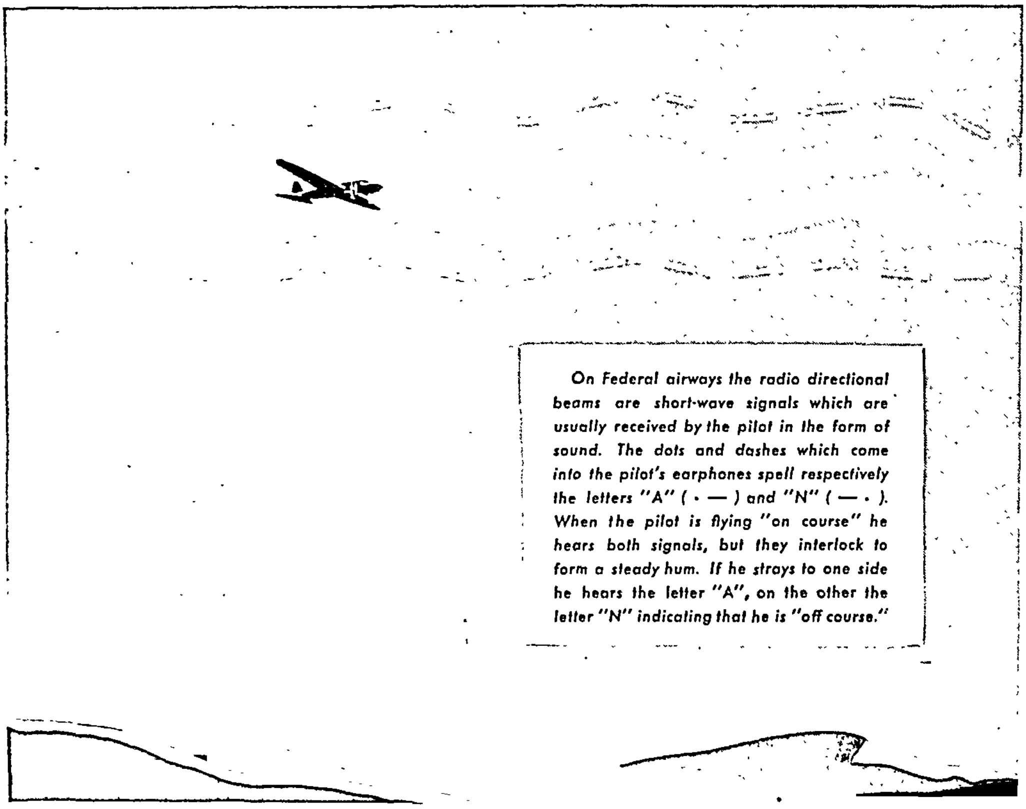
SCIENTIFIC VERSUS MECHANICAL SURGERY

A REVIEW of the postoperative complaints of a number of patients in any large clinic forcefully brings out the high morbidity of routine surgical procedures. The recurrence of the symptoms for which the patient was operated on, the useless destruction of endocrine tissues, the frequent gallbladder operation without adequate preoperative study, and the inevitable "prophylactic" appendectomy for any complaint referable to the lower right abdominal quadrant comprise a sad commentary on certain surgical activities. On the other hand, the attempts of some operators to do major surgery without adequate training, or working in hospitals poorly equipped, emphasize the vast recuperative powers of the human body.

No quarter should be given to the operator who is responsible for the surgical cripple. Too many unfortunate individuals are today chronic invalids because of the fear of the surgeon to say "no" when an operation has been recommended, or the desire to demonstrate his ability. The sooner the profession assumes the responsibility for the elimination of this type of work, the sooner there will be definite improvements in the standards of present-day surgery. Nevertheless, no attempt to annihilate the performance of simple surgery in the moderately equipped hospital should be tolerated. There is no need to disqualify a man of good scientific ability because he is located in a community where he does not have access to modern diagnostic aids. On the contrary, every effort should be made to encourage him, and to stimulate the community to improve its hospitals by intelligent education and cooperation, rather than by arbitrary imposition of unwarranted handicaps.

Great progress has been made in evaluating the patient for surgery. The work of *Weech* and *Ling*, *Ravdin*, *Scudder* and *Sloan*, and many others in the field of protein balance and tissue edema has placed in our hands new methods that permit quantitative rather than empirical pre- and postoperative care. The free use of normal saline infusions or blood transfusions without definite knowledge of what is indicated today almost constitutes malpractice. Nor are these essentials so difficult to obtain that they are beyond the scope of the small hospital or the part-time surgeon. The actual work can be done quickly by a technician, and the cost of equipment is within the reach of any institution that accepts the sick. The interpretations need no special postgraduate course, and if the surgeon is willing to do some extra studying he can quickly and easily master all he needs to know for clinical application.

One is not infrequently startled and pained to see patients taken to the operating room poorly prepared and returned to be starved for a period of thirty-six to seventy-two hours, even in simple abdominal interventions. What is more puzzling is to see the same patient receive a so-called "low enema" within six to twelve hours. One should spend a few hours in [illegible] fluoros[illegible]ic room and determine [illegible] r flui[illegible] pass proximal in the [illegible] stin



On Federal airways the radio directional beams are short-wave signals which are usually received by the pilot in the form of sound. The dots and dashes which come into the pilot's earphones spell respectively the letters "A" (• —) and "N" (— •). When the pilot is flying "on course" he hears both signals, but they interlock to form a steady hum. If he strays to one side he hears the letter "A", on the other the letter "N" indicating that he is "off course."

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* Prostigmin Methylsulfate is the dimethylcarbamic ester of 3-hydroxy-phenyl-trimethyl-ammonium methylsulfate.

PROSTIGMIN METHYLSULFATE

THE DUODENAL SYNDROME

ASSOCIATED WITH ABERRANT SUPERIOR MESENTERIC ARTERY*

FELIX CUNHA, M.D., F.I.C.S.
SAN FRANCISCO

ATTEMPTS at more minute and detailed diagnosis in gastro-enterology are often confronted with the critical suggestion that the addition of new terms to the existing nomenclature, plus the addition of symptoms described as a group under the heading of new syndromes, serve only to confuse. That this criticism is hardly fair is obvious, as the better we as physicians understand how a definite group of symptoms is produced, the better shall we be able to guide and treat patients rationally and successfully.

Specifically, the group of patients dealt with in this study presented a train of symptoms which from the history and physical examination suggested almost invariably the presence of duodenal pathology. Corroborative roentgen examination is too frequently devoted solely to the determination of whether or not an ulcer is or is not present in that locale. If duodenal irritability and inconstant irregularity are grossly evident, a certain percentage of keener minded or possibly better trained and experienced roentgenologists will venture, sometimes with trepidation, a diagnosis of duodenitis. Even among the latter group, however, will be found a certain percentage who do not yet admit that duodenitis is a definite clinical entity presenting almost a classic roentgen picture.

When one is presented with a patient in whom there is a definite complaint referable to the duodenum, and the presence of ulcer has been ruled out, it is almost compulsory that one should search more intensely and minutely other parts of the duodenum than the bulb for an adequate explanation as to how the symptoms have been produced. In speaking of the duodenal type of symptoms, reference is made to epigastric pain and burning, occurring two to three hours after food intake, eructation of hyperacid fluid or food, vomiting of acid gastric content, and fulness and distention in the midepigastrium accompanied by belching of gas, similar to the symptoms in cases of true ulcer. Too frequently examination of the duodenum under the fluoroscope is confined to a cursory view of the region of the bulbus alone, with little or no attention paid to the second and third portions of that structure.

In cases such as those mentioned, further study of the outline and function of the duodenum, particularly of the second and third portions, is indicated It became noticeable in a series of cases seen by my associates and me that, whereas the presence of an ulcer could fairly definitely be ruled out and certain anatomic changes or deviations in the duodenum could be demonstrated when present, certain associated gross body changes, particularly with regard to marked alterations in body weight, were common to each case. These weight changes were so striking that they could not possibly be overlooked.

REPORT OF CASES

The earliest patients examined were a group of women who had undergone strenuous regimens of dieting for the purpose of

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* Read at the Second Annual Assembly of the United States Chapter of the of Surgeons, Philadelphia, Oct 14, 1938

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The elevation or depression of the levels at which certain structures lie may become so altered in their anatomic relationship to adjacent structures that in cases such as those cited here, in which the focal point of compression of the duodenum takes place where this is crossed by either the superior mesenteric artery itself or by an aberrant branch, gross duodenal changes are initiated, plus disturbance of normal function, so that the train of symptoms ensuing are only a natural outcome of such changes.

Granting that such a disturbed anatomic relationship can take place because of altered conditions produced as already mentioned, consideration must be given to certain metabolic, endocrine, hematogenous and deficiency states which can produce the same type of fat cell changes as the depletion caused by drastic dieting, or the pili [illegible] sue as found in person [illegible]

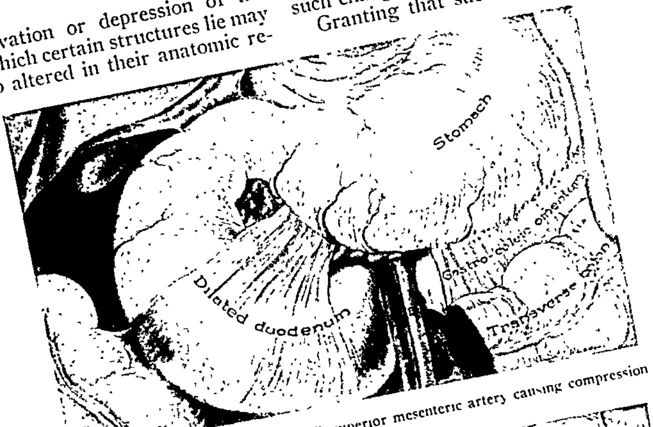

FIG 1. *A*, superior mesenteric vein *B*, superior mesenteric artery causing compression

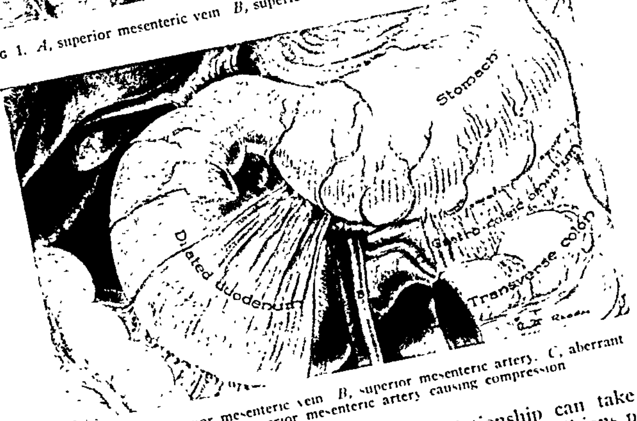

FIG 2. *A*, superior mesenteric vein *B*, superior mesenteric artery. *C*, aberrant branch of the superior mesenteric artery causing compression

such an enema, and how long it takes food to reach the cecum from the time of oral ingestion. *Alvarez* long ago demonstrated that empty intestines become distended with gas, yet many surgeons withhold food while resorting to mechanical and physiochemical methods to reduce distention. The continuous drip, by rectum, into a vein or under the skin, and the massive use of morphia to make the victim forget his discomfort seem somewhat unfair to a patient whose stomach, duodenum and ileum have normal functioning ability. After gallbladder surgery the biliary system does not stop functioning. The vomiting patient will show bile in the vomitus. Why, then, should not the stomach receive food and be encouraged to carry on its normal function? In abdominal distention the Miller-Abbott tube will, in most cases, save the patient much embarrassment and shock, and should be used earlier rather than later. In gastric surgery the passage of the Levine tube into the small intestine permits early feeding and the maintenance of a chloride-protein-carbohydrate balance, thus reducing the possibility of tissue edema, slow healing, shock and many other complications too frequently attributed to everything but failure to evaluate properly the patient and give the correct assistance.

Thus our duty is clearly outlined. Every effort must be made to teach the younger surgeon that there is no place for mechanical surgery. Skilful technic is essential. The careful and gentle operator commands an asset worthy of his calling. The true surgeon is one who applies all knowledge to the preparation and care of his patient, who is willing to sacrifice an operation rather than subject a patient to ill advised surgery or to create a surgical cripple because of poor judgment. If the young surgeon will realize that his service to mankind should be creative rather than destructive, he will be willing to endure the sacrifices that the science of surgery demands for success and thus become an asset to the profession.

BENJAMIN I. GOLDEN.

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THE NATIONAL ASSEMBLY OF THE INTERNATIONAL COLLEGE OR SURGEONS WILL BE HELD FEBRUARY 12 AND 13, 1940, AT VENICE, FLORIDA, UNDER THE DIRECTION OF INTERNATIONAL PRESIDENT-ELECT DR. FRED H ALBEE AND THE PRESIDENCY OF DR. FREDERICK M. DOUGLASS.

◆

called attention to obstruction of the duodenum by the superior mesenteric artery, but at the time and since, his comment attracted little attention; the idea was developed no further by him, so automatically his description fell by the wayside. In his report he called attention to the pull of the ptosed intestine on this area, causing such tension that the mesenteric vessel became like an elastic band, stretched tight and acting as a constricting cord across the duodenum. His attention and enthusiasm being devoted entirely to the newly discovered ptosis, he described the arterial relationship as only a minor influence.[4] In his report he alluded constantly to the asthenic woman. The observation of the same syndrome occurring in the converse state, that in which gross additions of fat were present, escaped his attention.

That symptoms produced by duodenal compression have caused considerable mental perturbation in the minds of notably keen students of medicine is evidenced by the fact that such names as Ochsner,[5] Finney,[3] Bloodgood[2] and Barker[1] are met with in association with the literature pertaining to the disorders of this region. However, it was not until 1907 that Stavely,[6] after a somewhat detailed study of conditions which followed a certain percentage of gastroduodenostomies, called attention to the intermittent duodenal obstruction accompanied by chronic duodenal stasis produced primarily by mesenteric artery compression. Since then other investigators have studied and elaborated on his description.

FURTHER ANATOMIC CONSIDERATIONS

The study herein reported has been made purely with the objective of trying to unravel some of the strands of uncertainty connected with gastro-intestinal diagnosis, endeavoring more particularly to stress the point that perhaps surgeons have not focused their attention sufficiently on structures extraneous to the duodenum as producers of these symptoms.

It is desired to stress that the syndrome described herein is a separate and distinct clinical entity resulting solely and entirely from compression of the duodenum by the superior mesenteric artery or an anomalous branch, taking place because of a marked alteration in the immediately adjacent anatomic relationship. It is not to be confused with possible similar duodenal symptoms brought about as the result of such changes as the following: (*a*) Functional spasm of the duodenum. (*b*) Congenital anomalies involving either changes in the length of mesentery or caused by the presence of peritoneal bands. (*c*) Mechanical changes in outline and course of the duodenum as the result of pericholecystic inflammation, or periduodenal inflammation involving the region of the ligament of Treitz. (*d*) Inflammatory and enlarged retroperitoneal glands, although these can enter into the production of this syndrome if so situated that they can be direct influences. The chances of this occurring are somewhat remote. (*e*) Gastroptosis or enteroptosis. These conditions and the symptoms produced by them fall into a totally different category.

In man the third and fourth portions of the duodenum lie behind a peritoneal fold, and that portion of the fold situated behind the root of the mesentery and in the fold behind the root of the mesentery and in the immediate vicinity of the mesentric root has a flattened to ovoid form. The anatomic relationship of the structures here, as elsewhere in the abdomen, is best suited to the postures assumed by quadrupeds, the erect position serving to overemphasize and exaggerate the phenomenon described here, and therefore the symptoms. In identical manner, for the same reason, the symptoms just described are exaggerated when the patient is stand'ng and wi ameliorated when he is ly o This point is made use of weight reduction, some under medical supervision, others not. The common factor in all was that marked changes had taken place in the body contour and secondarily that just as marked changes must have taken place in the internal body mechanics as the result of alteration of anatomic relationships. Each patient had begun to complain of gastric, or, rather, duodenal, type of symptoms shortly after the weight change had taken place. Conversely, as the study of such cases was elaborated on, the addition to the series of many in whom gross and excessive addition of weight had occurred became necessary, as in these cases there was present the identical factor common to all, namely, alteration in anatomic relationship. This alteration was confined to a specific area, namely, that wherein the superior mesenteric artery or an aberrant branch lay in contact with the duodenum, or crossed it, usually in its third portion.

Roentgenologic examination of these patients showed the bulbus region invariably negative for ulcer, so attention became automatically focused on the second and third portions of the duodenum, more on the latter.

In the beginning of the studies it was somewhat astonishing to discover a percentage of cases in which anomalous position of either the superior mesenteric vessel itself or an aberrant branch crossing the duodenum produced, first, duodenal compression, second, duodenal stasis, and, third, duodenal obstruction, partial, intermittent or even complete. This observation of the part played by an aberrant branch of the superior mesenteric vessel was possible to make and verify by a series of circumstances extremely fortunate from the standpoint of study. In one of the young women of the series a ruptured extra-uterine pregnancy developed. At operation there were no unusual difficulties, so opportunity was presented to explore the region of the duodenum, and in so doing an aberrant branch of the superior mesenteric artery was located, crossing the terminal portion of the third portion of the duodenum in such a manner as to act as a constricting band. A short interval later, a similar opportunity presented itself in another abdominal operation. Exploration revealed pathologic features identical with those in the first case, except perhaps for a slight divergence in the direction of the crossing aberrant branch, it being a bit more oblique than transverse. Later, under somewhat similar circumstances, a case was encountered in which compression of the duodenum, with attendant stasis and duodenitis, was caused by the superior mesenteric artery itself.

It is reasonable to presume, therefore, in view of the number of cases clinically presenting this syndrome, that an anatomic alternation of the kind just described, particularly one in which an aberrant branch is encountered, may be more frequent than is suspected. In spite, however, of the compressing position of the artery or its branch, no symptoms had previously been complained of in the cases studied; therefore in all probability no tissue changes had taken place until marked alterations in the body structure itself had occurred through either gross depletion or gross additions of fat to the body.

ETIOLOGY

The changes in mechanical relationship and proximity of the structures in the second and third portions of the duodenum to those surrounding them become grossly distorted when tissue changes take place. In the process of dieting to reduce, particularly if drastic, one is aware of the fact that the intra-abdominal mesenteries and the omenti, plus the retroperitoneal spaces, lose fat in quantity and early in the process, prior even to the external structures of the body. Particularly is this true of such structures as the hepatoduodenal ligament, the gastroduodenal ligament, the gastrocolic ligament and the lesser and greater omenti. This is readily verified whenever exploratory laparotomy is done in cases in which advanced or even moderately advanced gastrointestinal carcinoma or any other wasting disease is present. In the process of adding on a great deal of weight, it is in these same structures — mesenteries, abdominal ligaments, omenti and retroperitoneal spaces — that fat cells are deposited in proportional amount, filling them out in about the same way in which a pillow is stuffed.

in mild attacks, and because of their similarity to attacks of gallbladder disease and the presence of quantities of bile in the vomitus they are described by the patient as "bilious spells." During such attacks the tenderness and spasm of the musculature of the entire upper abdomen are definite, gradually subsiding and disappearing as the attack diminishes in severity and subsides.

LABORATORY PROCEDURES

Gastric Analysis. This is ordinarily not very helpful except in cases in which duodenal regurgitation has taken place, neutralizing the free hydrochloric acid entirely or to a very high degree. Anacidity or extreme hypo-acidity is only significant. The presence of bile in the gastric content in considerably above the expected normal amount is also significant and should be taken into consideration. Its presence and alkalinity play a part in neutralization and reduction of free acid.

Duodenal Intubation. The results of duodenal intubation are significant but are useful only when an abnormally large amount of duodenal content is obtained and when much more than the usual amount of bile is present in the duodenal content. Duodenal lavage as a therapeutic procedure for aid in relief of the symptoms will be discussed under therapy.

Blood Tests. The usual studies should be made in order to rule out the presence of a primary or secondary anemia, which can act as an underlying etiologic factor.

Determination of the Basal Metabolic Rate. This is indicated in cases in which obvious thyroid derangement is present, but is recommended as a routine in all cases, as frequently serious errors in mental calculation come to light which were not suspected. The necessity of rechecking such surprises need hardly be mentioned. Too often what appears on history taking and physical examination to be an apparently normal thyroid gives on further investigation a high basal metabolic recording, and a recheck confirms the fact.

Roentgen Examination. This is of the utmost importance in diagnosis, with particular stress laid on fluoroscopic examination of the duodenum. The stomach and duodenal bulb being negative as to the presence of ulcer, routine examination of the gallbladder is essential, in order that any pathologic change here may be excluded.

The absence of stone, although not entirely conclusive from roentgenographic examination, when coupled with the absence of inflammatory change in the gallbladder and its motility and dye-absorptive and -excretive power, indicates that more detailed examination of the duodenum is in order. Too frequently the second and third portions of the duodenum are overlooked, and unless the duodenal bulb has been grossly dilated because of the long-continued compression, the symptoms are attributed to a "spastic colitis," although there is no roentgen or fluoroscopic evidence of spastic colon.

The intricacies of accurate diagnosis in gastro-intestinal disorder warrant the repeated admonition of scrupulous attention to minute detail. In these cases that attention should be focused on the second and third portions of the duodenum.

In reviewing the available literature regarding pathologic changes in this region, one frequently encounters the term "characteristic roentgenologic picture." Roentgenograms cannot possibly demonstrate the condition, except when extreme dilatation of the duodenum has taken place. All evidence confirming diagnosis must of necessity be fluoroscopic and is obtainable only by manipulation of the fluoroscopic table and studying the patient, in reality the barium column, with the patient in various positions. This is important because there is one parti vhi serves most to cor

Among these body states may be enumerated diabetes mellitis, hyperthyroidism, hypothyroidism, hypo-ovarianism, true and subclinical myasthenias, Addison's syndrome, hypo-adrenalinism, the primary and secondary types of anemia, and, lastly, carcinomas anywhere in the body, when accompanied by wasting. In other words, any disease or syndrome wherein gross and drastic changes in body fat can occur, whether by loss or by addition, may be the etiologic factor in the production of these symptoms.

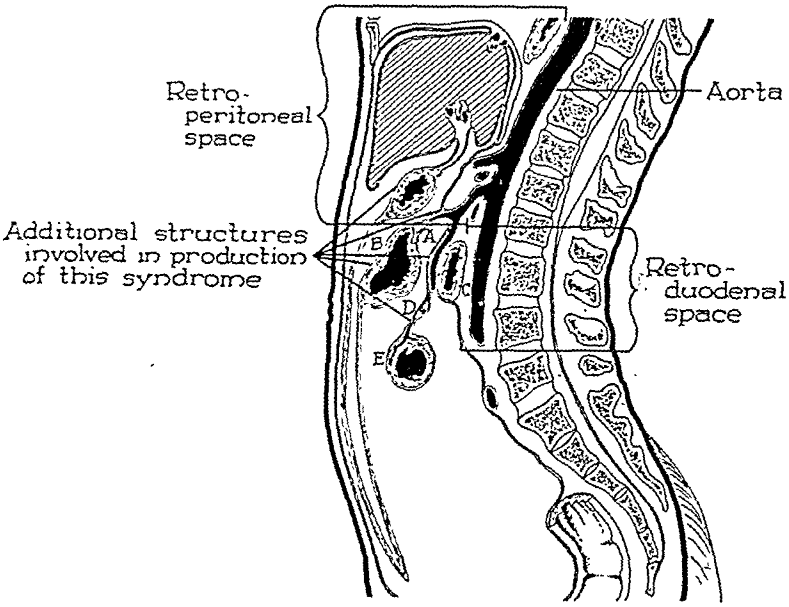

Fig. 3 Sagittal section of the abdomen. *A* indicates the superior mesenteric artery crossing the duodenum, *B* the transverse colon, *D* the mesentery and *E* the jejunum. Changes in elevation or depression of the area posterior to the colon (*B*) and the duodenum (*C*) favor compression by the superior mesenteric artery (*A*).

In the subclinical myasthenias and hypo-adrenal syndromes, an additional anatomic change may complicate the picture, namely, that produced by the sagging of such structures as the stomach and small intestine, caused entirely by complete or almost complete atony of their smooth muscle. It can be readily visualized that the addition of such a complicating change to that already described would serve to produce a gross exaggeration of the latter syndrome.

In order to describe more adequately exactly how this syndrome is produced, a short description of the normal anatomy of the region involved is necessary. In addition, a description of the more common anomalous positions of the artery itself, as reported in the literature, and of its aberrant branches as they have been seen to occur, is helpful. This can best be accomplished by means of a group of anatomic illustrations (figs. 1, 2 and 3). It is of particular importance to note the relationship of the position of the superior mesenteric artery to the duodenum under normal conditions and then perhaps to visualize the relationship of the duodenum and artery together to the underlying and surrounding fatty tissue. The amount of such tissue may be normal, grossly depleted or much increased, as the case may be, depending entirely on the underlying bodily status. The drawing depicting a transverse view of this relationship (fig. 3) is best illustrative.

REVIEW OF THE LITERATURE

More than fifty years ago Glenard[4] in his classic description of enteroptosis

All the duodenal wall changes are dependent entirely on the degree of compression; in only extreme cases are complete fixation and obstruction established. More often than not the food column, or, as one sees it fluoroscopically, the barium column, is propelled by peristalsis against the compressed barrier, and a small or large amount, varying in the individual case, is able to trickle through. The remainder is carried, by the peristaltic action set up, backward toward the pylorus, then once again toward the jejunum, and a bit more gets through. This procedure repeats itself endlessly. The amount of pressure exerted on the duodenum by the compressed artery naturally determines the amount of food or barium which is able to pass by and onward down the intestinal tract.

In those cases in which the syndrome has been present over a long period, absolute stasis in the duodenum is sometimes noted, brought about through a *fatigue inertia* of the smooth muscle from overwork, propelling itself against an unyielding force. In these cases the associated degree of duodenal dilatation is often extensive. Oblique observation, the patient lying in the left lateral or left oblique position with the hips elevated, in most cases will demonstrate a partial or even total release of the compression, and the barium column will pass onward and downward in the intestinal tract. This observation is of particular diagnostic significance and therefore to be stressed. Placing the patient in the partial Trendelenberg position and comparing the changes taking place with those found when the patient is in the standing position will often reveal that the condition is aggravated or intensified in the latter position. The patient may be placed in a modified knee-chest position, face downward, and pillows placed under the lower abdomen and thighs, in which case a partial or total alleviation of the compression takes place.

THERAPY

1. *General.* Correction or improvement of the underlying endocrine, metabolic or nutritional factors involved, if such exist, should be attempted.

2. *Dietary.* A high caloric diet free from roughage or irritant components is indicated in those cases in which weight loss has been a prominent feature. Conversely, a low caloric intake, a smooth diet and absence of roughage should be given in those cases in which marked increase of weight has taken place, accompanied by the proper associated therapy as indicated, either endocrine or metabolic.

3. *Mechanical Support.* Properly fitting abdominal supports which give a lift to those structures in the upper portion of the abdomen are indicated. An ordinary abdominal belt or support can be used with the addition of an inlying flanged pad so that the stomach and duodenum are given a distinct lift as verified by fluoroscopic examination. The amount of lifting of the duodenum is estimated by fluoroscopic examination after the patient has been given a barium meal.

4. *Drug Therapy.*

A. Appropriate therapy of underlying pathologic condition

- (*a*) Endocrine
  - thyroid extract
  - ovary (whole gland extract)
  - pituitary extract
- (*b*) Nutritional. Caloric intake to be corrected
- (*c*) Circulatory — when and if indicated
  - iron
  - liver
  - ventriculin
- (*d*) Deficiency state
  - vitamin A, B and D, singly or combined, depending on the clinical status

B For the associated hyperperistalsis of the smooth muscle the following may be used, when indicated.

- (*a*) Antispasmodics
  - belladonna
  - atropine
  - papaverine
  - trasentin
  - *novatropine*
- (*b*) Sedatives
  - bromides
  - phenobar'

oscopic examination and is of help in diagnosis.

SYMPTOMS

A variety of symptoms may be encountered in these cases, but most frequent is a group suggestive of duodenal ulcer. In the order of relative frequency of occurrence the symptoms are:

1. *Pain.* This is midepigastric or in the vicinity of the umbilicus and is accompanied by upper abdominal tenderness and tension. There are spasm and rigidity of the musculature, producing soreness. Usually the pain is not relieved by food intake, in contradistinction to the pain in cases of ulcer.

2. *Flatulence, Bloating.* This is rather common and is probably due to fermentation of both gastric and duodenal contents secondary to duodenal dysfunction. Aggravating this symptom is often the influence of disturbed duodenal function on the adjacent gallbladder, acting reflexly to disturb its normal function.

3. *Vomiting.* This is present in nearly every case, almost exclusively without nausea, and is invariably copious, temporarily relieving discomfort. Dehydration and loss of chlorides frequently complicate the condition, producing acidosis, with increasing vomiting, dehydration and dechlorination, so that a vicious cycle is set up. A minor but important detail is the presence of far more than the ordinary content of bile in the vomitus.

4. *Constipation.* This is the rule and is secondary to lowered food intake on the part of the patient because of fear of ensuing symptoms and because of disturbed digestion in the small intestine.

5. *Headache; Dizziness; Vertigo.* These are encountered in a high percentage of cases and are due to the absorption of toxic products through the duodenal wall into the general circulation, inspiring some writers to use for such a condition the term "duodenal migraine."

6. *Epigastric Burning.* This is not usually encountered. It may perhaps be due to backward pressure exerted against the pyloric ring by the reverse peristalsis present and alkaline duodenal contents regurgitating into the stomach and neutralizing acidity.

OBJECTIVE SIGNS

If an associated endocrine, metabolic or deficiency state is present as an underlying factor, it can often be noted on inspection of the patient alone while taking the history, as the degree of such change is likely to be marked. Mild disturbances in these conditions do not produce sufficient tissue change to alter mechanically the relationship necessary to produce these symptoms. The condition of the hyperthyroid individual is usually obvious from merely casual observation. The same is true of the hypothyroid, hypo-ovarian, myasthenic or anemic, etc., patient. If any of these conditions are underlying, they are so grossly evident as to be obvious. Among the patients in whom none of these changes is underlying, one is confronted most frequently with women who have undergone drastic dietary restriction for the purpose of weight reduction.

The objective signs are confined to the abdomen alone, except in cases in which signs of the associated syndromes are present in addition. The signs are tenderness and spasm of the upper abdominal musculature, confined to the midepigastric and peri-umbilical area. With a slight stretch of imagination one could say that perhaps the localized point or area of acute tenderness is not as sharply defined or focal as in a case of duodenal ulcer.

In one patient of the series reported here, a woman who had lost considerable weight, visible reverse peristalsis across the upper abdomen was noted, and the degree of obstruction from compression was severe.

Often symptoms occur intermittently

cette artère ou ses embranchements distributifs déterminent des dérangements analogues.

Les symptômes sont analysés; le traitement opératoire est discuté, et les procédés employés dans le laboratoire sont indiqués. L'auteur attache une grande importance à l'étude fluorscopique de la deuxième et de la troisième portion du duodénum. Le traitement nonopératoire est donné ainsi que les manoeuvres opératoires utiles dans les cas extrèmes et refractaires.

ZUSAMMENFASSUNG

Das duodenale Syndrom bei anormalem Verlauf der Arteria mesenterica superior

Ein Erscheinungsbild wird beschrieben, dessen Symptome absolut für das Vorliegen eines duodenalen Ulcers sprechen, in dem aber die klinische und röntgenologische Untersuchung diese Diagnosis ausschliessen. Starke Schwankungen des Körpergewichts, entweder Fettschwund oder bedeutende Fettablagerungen, verändern die anatomischen Verhältnisse und damit die mechanische Funktion des Abschnittes des Duodenums, der von der Arteria mesenterica superior oder einem anormal verlaufenden Ast gekreuzt wird.

Die Symptome werden beschrieben und die nötigen Laboratoriumsuntersuchungen angegeben. Besonderer Wert wird auf die gründliche röntgenologische Untersuchung des zweiten und dritten Duodenumabschnittes gelegt. Ein konservatives Behandlungsverfahren wird angegeben und die chirurgischen Vorgehen werden beschrieben, die für besonders schwere und hartnäckige Fälle angewendet worden sind.

SUMARIO

El síndrome duodenal asociado con arteria aberrante mesentérica superior

Un síndrome es decrito con sintomas casi patognomónicos de úlcera duodenal pero en el cúal examen clínico y roentgenológico excluye éste diagnóstico. Cambios marcados en el peso del cuerpo, marcada evacuación de grasa ó marcado aumento de grasa, altera las relaciones anatómicas y por lo tanto la función mecánica de esa región del duodeno crusada por la arteria mesentérica superior ó una rama aberrante.

La sintomatología es descrita, con los trabajos de laboratorio indicados. El valor del estudio fluoroscópico, particularmente de la segunda y tercera porción del duodeno, es recalcado. Un bosquejo para un tratamiento conservativo es dado, y los distintos procedimientos quirúrgicos en los casos extremos y refractarios son citados.

RIASSUNTO

Sindrome duodenale da arteria mesenterica superiore aberrante

Una sindrome è descritta con sintomi quasi patognomonici dell'ulcera duodenale, in cui l'esame radiologico e clinico escludono la forma ulcerativa. Marcate modificazioni del peso corporale, sia per deplezione o per aumento di grasso, alterano la relazione anatomica e di conseguenza la funzione meccanica della regione del duodeno attraversata dall'arteria mesenterica superiore o da un ramo aberrante di essa.

La sintomatologia è descritta con gli esami di laboratorio indicati. L'importanza dell'esame fluoroscopico, particolaramente della seconda e terza porzione del duodeno, è ricordata. L'autore descrive il trattamento conservativo del caso, e i metodi chirurgici da usare nei casi estremi e refrattari.

During fluoroscopic examination of these patients, most evident is the presence of antiperistalsis, or reverse peristalsis, in the second and third portions of the duodenum, the column of barium reaching the point of compression at about the terminus of the latter, then being unable to follow through, antiperistaltic waves of muscular action carrying it backward to the pylorus, with the production of an endless churning back and forth of the barium column between these two points. The food column acts in a similar manner.

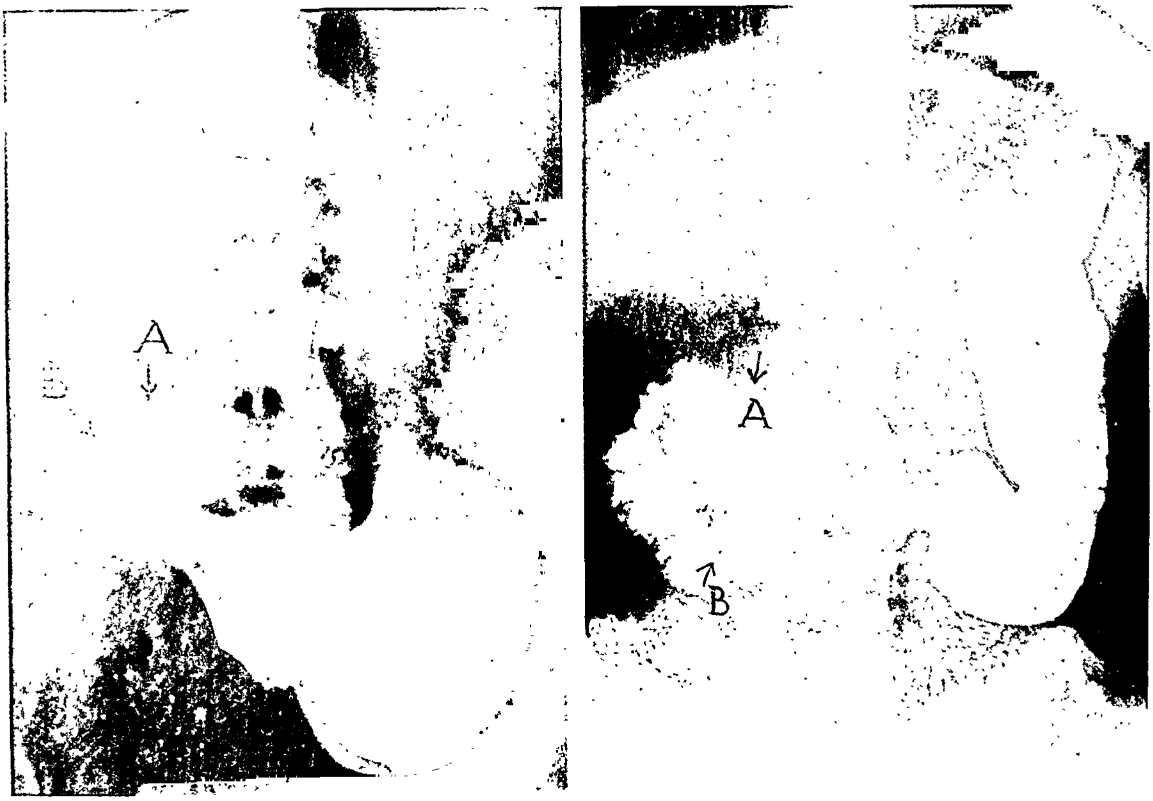

FIG. 4 The roentgenogram on the left shows an enlarged and dilated duodenal bulb (*A—B*). That on the right shows dilated first, second and third portions of the duodenum (*A—B*).

Owing to the increased intensity of the peristaltic wave because of meeting such obstruction, and in attempting to overcome it, after some time a secondary dilatation of the duodenum takes place, in order to accommodate the increased food content, so that in a large percentage of cases a duodenum of more than usual width and caliber is found.

Because of the inability of the duodenum to rid itself in a normal manner of this churning mass, an irritating mechanical friction of the duodenal mucosa takes place, even though the diet may be free from roughage and irritant fiber material, and duodenitis is produced, manifesting itself roentgenologically by a fairly constant irregularity of the duodenal outline.

Such changes are not as marked in the region of the bulb itself, because at this point the reverse pressure exerted against the pylorus is not as great as that at the point of yielding. Some relief of the intraduodenal pressure is obtained by food regurgitating through the pylorus into the stomach, at the same time releasing some of the pressure exerted against the compression point, but in no way influencing the vicious circle which has become established.

Thus far about five hundred patients have undergone the operation, but in America, as in France, many patients have been operated on by a modified method. Sometimes the left splanchnic resection is associated with the same operation on the other side (Peet, of Michigan, reported 65 per cent of patients thus successfully and permanently cured); sometimes splanchnic resection is associated with resection of the first two pairs of lumbar ganglions (Walters, of the Mayo Clinic, has been successful in 70 per cent of cases thus treated) and sometimes with resection of the adrenal gland (Leriche, Wertheimer). I shall simply mention the multiple thoracicolumbar rhizotomies performed by Adson and his collaborators.

It is interesting to recall here that Wertheimer, after having tried various modifications of my operation, stated: "The most remarkable and lasting result (recovery persisting after four years) has been obtained by simple resection of the splanchnic nerves of the left side." That is to say, by my method.

I am fully convinced that in truly functional arterial hypertension without evident renal alteration (in many instances serious renal lesions are found unexpectedly at autopsy), without high azotemia and without pronounced sclerotic lesions of the arteries, simple left splanchnic resection can give satisfying and sometimes brilliant results.

There have been no deaths following my operations, whereas other proposed procedures, such as removal of the adrenal gland, are accompanied by serious dangers to the life of the patient.

The statistics of Italian surgeons (Ciceri, Alessandri and Valdoni) disclose a series of cases with clinical recovery remarkable for an illness such as true arterial hypertension, which is refractory to all medical treatment and in which there has been no amelioration of the morbid symptoms, above all, the subjective troubles of the patients, as Leriche has recognized from his observations.

It is not just to endanger the life of the patient by subjecting him to hazardous operations. If simple resection of the left splanchnic nerves proves insufficient, one may operate in two stages, performing in the second stage either a resection of the splanchnic nerves on the opposite side or a superior lumbar ganglionectomy. However, I do not believe these more complicated operations offer any advantages. Nevertheless I subscribe to the practice of adding to resection of the left splanchnic nerves alcoholization of the right splanchnic nerves. This method of alcoholization of the splanchnic nerves was proposed by me and was done many times by Ciceri, of Venice, and by my collaborator, Valdoni, of Rome, in clinical cases of hypertension which failed to respond to the resection of the nerves alone or which presented contraindications (obesity or cardiac weakness) to the technic of surgical intervention. Blocking of the splanchnic nerves with alcohol on one or both sides may eventuate in helpful lowering of the blood pressure; this, however, lasts only a few months. Naturally this represents an emergency and succedaneous treatment.

TECHNIC

The technic proposed by me, which is free from all danger, is the following:

The day preceding the intervention the patient is given an injection of novocain (*20* cc. of a 1 per cent solution) in the left subdiaphragmatic space where the splanchnic nerves pass This is to assure that the anesthesia of the splanchnic nerves suffices to determine a *lowering of the blood* pressure *If* after two or three such attempts at novocainization there is no lowering of the pressure, I *do not* advise the *operation*.

Anesthetization For the anesthesia of the left splanchnic nerves a long needle is used for the injection. This is pointed immediately above the twelfth *rib*, 4 cm *from* the median *line* of the spinous process The needle is pushed forward and slightly inward until it reaches the body of the vertebra, pas[illegible] through the skin, the subcut [illegible] cont [illegible]

C Where statis and atony of smooth muscle are present and increase in muscle tonus is desired:

Ephedrine
Benzedrine } Alone or in varied
Strychnine } combinations
Pituitrin

D. Duodenal intubation and lavage with:

- (*a*) Normal saline solution
- (*b*) Alkaline solutions—sodium carbonate
- (*c*) Dilute silver nitrate—1:5,000 or 1·8,000 as a therapeutic agent in overcoming the inflammatory and irritant changes.

5. *Surgical Treatment.* A variety of surgical measures have been advocated for relief of this condition. Among these are gastroduodenostomy and gastro-enterostomy. It is difficult to understand how the latter procedure can possibly be indicated. Gastroduodenostomy is indicated only in refractive cases not amenable to conservative therapy. Our experience with a series of more than twenty cases classified under this heading has been that careful history taking, proper study, and correction of the underlying etiologic factor, whether endocrine, dietary, circulatory, or metabolic deficiency, supplemented with conservative measures, will give a satisfactory percentage of successful results.

There has been reported in the literature one case in which an aberrant branch of the superior mesenteric vessel was ligated and resected, with complete relief of the duodenal compression. This would be feasible procedure in any case in which the identical conditions were present.

Duodenopexy has also been recommended, but it is difficult to visualize in what manner it would help.

SUMMARY

A syndrome is described with symptoms almost pathognomonic of duodenal ulcer but in which clinical and roentgenologic examination exclude this diagnosis.

Marked changes in body weight, gross fat depletion or gross fat increase, alter the anatomic relationship and therefore the mechanical function of that region of the duodenum crossed by the superior mesenteric artery or an aberrant branch.

The symptomatology is described, with the laboratory procedures indicated.

The value of fluoroscopic study, particularly of the second and third portions of the duodenum, is emphasized. An outline of conservative management is given, and the various surgical procedures which have been used for extreme and refractive cases are cited.

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RÉSUMÉ

Syndrome duodénal dû aux anomalies de la grande artère mésenterique

Un syndrome duodénal offrant des symptômes presque pathognomoniques de l'ulcère duodénal est décrit. Néanmoins dans les cas de cette nature l'examen clinique ainsi que l'examen roentgenologique exclut le diagnostic d'ulcère duodénal. L'engraissement ou l'amaigrissement altère les rapports anatomiques et le fonctionnement de la région du duodénum avoisinante l'artère mésenterique supérieure. Les variantes de

Pende in 1924. The operation is limited to cases of hypertension in young persons and adults before senility, in whom clinical examination has shown no renal insufficiency, no advanced damage to the arteries and no azotemia.

Sometimes local anesthesia with novocain is satisfactory, but general anesthesia is preferred. The lumbar extraperitoneal approach is used. If anesthesia of the left splanchnic nerve induced by novocain the day before operation does not cause a fall of the blood pressure, even when repeated, the operation is contraindicated. Good results followed in properly selected cases.

RÉSUMÉ

La splanchnicotomie gauche pour l'hypertension artérielle essentielle

Pende en 1924 proposa la résection des nerfs splanchniques gauches majeur et mineur comme mode de traitement de l'hypertension artérielle. L'opération ne doit être employée que chez les jeunes et les adultes qui ne présentent ni insuffisance rénale ni azotémie ni dégénérescence marquée des artères.

L'anesthésie locale à la novocaine est parfois suffisante, mais il faut lui préférer l'anesthésie générale. La voie d'approche lombaire extrapéritonéale est recommandée. Si l'anesthésie à la novocaïne du nerf splanchnique gauche, faite la veille du jour de l'opération, n'amène pas un abaissement de la pression artérielle, l'opération ne sera pas entreprise. Dans les cas bien chosis, les résultats sont bons.

ZUSAMMENFASSUNG

Behandlung des essentiellen arteriellen Hochdrucks durch Extirpation des linken Splanchnicus

Pende hat in 1924 die Behandlung des essentiellen Hochdrucks durch Extirpation der beiden linken Splanchnicus-nerven angegeben. Die Operation kann nur in solchen Fällen erfolgreich vorgenommen werden, wo Hochdruck in jüngenem Alter oder bei Erwachsenen vor Eintritt der Senilität gefunden wird und wo durch klinische Untersuchung keine Niereninsuffizienz, keine bemerkenswerte Arterienschädigung und keine Erhöhung des Reststickstoffes angetraffen wird.

Manchmal genügt lokale Anästhesie mit Novocain, aber Vollnarkose ist vorzuziehen; der lumbare, extraperitoneale Weg wird benutzt. Wenn Anästhesie des linken Splanchnicus durch Einspritzung von Novocain am Tage vor der Operation keinen Fall im Blutdruck hervorruft, selbst bei wiederholter Durchführung, so ist der Eingriff kontraindigiert. Bei guter Indikationsstellung sind gute Resultate zu erwarten.

SUMARIO

Tratamiento de la presión arterial esencial por la esplacnicotomía izquierda

Tratamiento de la hipertensión esencial por la resección del nervio mayor y menor esplacnico izquierdo fué propuesta por Pende en 1924. La operación es limitada á casos de hipertensión en personas jovenes y adultos antes de la senilidad en los cuales exámen clinico no ha mostrado insuficiencia renal, ningun daño avanzado de las arterias y sin azotemia.

Algunas veces anestesia local con novocaína es suficiente, pero anestesia general es preferida. El aproche extraperitoneal lumbar es usado. Si la anestesia del nervio esplacnico izquierdo inducida por la novocaína el día antes de la operación no causa una caida de la presión arterial, aun cuando repetida, la operación es contraindicada. Resultados muy buenos siguen operaciones en los casos propiamente eleg.

TREATMENT OF ESSENTIAL ARTERIAL HYPERTENSION BY LEFT SPLANCHNICOTOMY

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IN 1924, at the Congress of Internal Medicine at Padua, Italy, I illustrated and proposed for the first time a treatment for essential arterial hypertension consisting of resection of the greater and the lesser left splanchnic nerve. This is the first operation on the sympathetic nervous system which has been conceived for the treatment of this disease. After a long period of clinical experimentation on more than five hundred patients and after a discussion at the International Congress of Surgery at Brussels in September 1938, my method was submitted to the surgical world and to scientific criticism. In this paper I wish to review the fundamental principles which concern the physiopathologic basis of the treatment, the operative technic, the therapeutic results, recent and remote, and the indications and contraindications for the procedure.

The physiopathologic features of my operation of left splanchnicotomy for the treatment of essential arterial hypertension, or functional arterial hypertension, as I prefer to call it, are based on the conception at present most widely accepted for this condition, that of a *neuro-endocrine syndrome*, with predominance of tonus of the vasoconstrictor sympathetic nerves and of the hormones or sympatheticotropic angiospastic metabolites. The arteriole-capillary hypertonicity here is generalized, accompanied by threatening crises of periodic occurrence, but it seems localized particularly in the vasculosplanchnic area, that is to say, in the great system of viscera and vessels which play a primary rôle in the regulation of the hematodynamic equilibrium. It is through the medium of this splanchnic system that the cerebral and medullary nerve centers presiding over vascular tone are able to act, as exemplified in the form of propioceptive and vasosensory reflexes of sinocarotid and cardioaortic origin; this, together with the adrenal hormone has a selective action, particularly on the splanchnic apparatus. The state of tonicity of the renal vascular system is of great importance in this connection.

The rôle played by the factors responsible for hypertensive reflexes is of great clinical importance in producing essential hypertension in man. These reflexes are occasioned via the splanchnic nerves. They may be suppressed by resection of these nerves; this has been verified by investigators who have studied the effects of splanchnicotomy in experimental hypertension by denervation (Fontaine and Mandl).

On the basis of my experiences since 1903, I believe that splanchnicotomy reduces the adrenal secretion. And I have clinically demonstrated that the results of splanchnic resection can be obtained by a unilateral resection of the large and small splanchnic nerves. This is in accord with surgical observations which have shown that interventions on the sympathetic nervous system on one side affect the functions of the opposite side.

From the results in my first case of essential arterial hypertension, in which the patient was operated on by Pieri, of Udine, Italy, in 1929, and from the result observed in numerous other cases, in some of which the patients have completely recovered, today one can consider the physiopathologic basis of my treatment as well founded, as has been verified by Fontaine, Leriche and many physiologists and clinicians.

SURGICAL TREATMENT OF HYPERTENSION*

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THE surgical treatment of hypertension is a difficult and, it seems to me, daring undertaking. Even in recent years it constituted a disputed domain between surgery and medicine. Certainly the surgeon who is concerned with this problem should always base his researches on a thorough knowledge of medicine in general and on the factors of causative pathology which concern diagnosis and decision to operate in particular. Only thus can one be successful. One must rigorously evaluate the indications, because one is dealing with persons seriously ill who by reason of their disabling condition are almost invariably inclined to favor the surgical point of view. In these cases it is the patient who wishes an operation and the surgeon who, in many instances, must dissuade him from insisting on such.

Pathologists have gone to a great deal of trouble to classify the different forms of the disease entity designated as hypertension. The commonly described forms are: *essential hypertension* and a *transitory form*. There are also a form known as *paroxysmal hypertension* and, finally, the so-called *symptomatic hypertension* secondary to disease of the heart and blood vessels. Recently Rieser, Coudau and Vadiguier have affirmed the existence of a so-called *malignant hypertension*.

A classification which seems to me to be more practical is the following: (1) *permanent hypertension*, relatively benign, found chiefly in advancing years; (2) *permanent hypermalignant hypertension*, caused by a glomerulonephritis (atheromatosis of renal vessels); (3) *hypertension caused by lesions of the cerebral vessels*, as noted by Cushing, Chauffard and other authors; (4) *fixed juvenile hypertension*, the most dangerous type, occurring principally in persons with cardiac decompensation.

The classification just proposed is systematic and marks considerable progress. But the task of the surgeon is not facilitated thereby; it is perhaps less important to classify than to individualize cases, considering each case as a separate clinical entity.

Experimental pathology has prepared the field for surgeons by researches of great value. They teach that one can raise the blood pressure in animals by kaolin (Dixon, Heller), and that one can lower pressure by operations on the kidneys, the adrenal glands or the thyroid. But it would be dangerous to apply to man the results obtained by experiments on animals, since the human organism is very different, indeed, from that of lower animals, and, as has already been stated, one is dealing with severely ill patients whose organs are not functioning in a normal physiologic manner.

The surgeon should intervene only in cases in which the physician has exhausted his medical resources. In other words, only cases of malignant hypertension are the domain of the surgeon.

The task of the surgeon is therefore a difficult one, involving much responsibility and demanding a great deal of judgment. *The surgeon should never look on hypertension as a surgical entity per se*, but he must take cognizance of the great rôle that the endocrine sys-tissue, the superficial fascia, the fibers of the trapezius muscle, the posterior sheath of the lumbodorsal aponeurosis, the small postero-inferior serratus muscle, the longissimus dorsi muscle, the intercostal muscles, the quadratus lumborum muscle and the endothoracic fascia.

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* Read at the International Congress of Surgery, Brussels, September 1938.

When the needle encounters the resistance of the vertebral body it is withdrawn somewhat and is then directed forward and more laterally in order to positively encounter the vertebral body. After the anterior portion of the surface of the vertebral body has been reached in this manner and it has been ascertained that no blood issues from the needle, the anesthetic solution is injected, *slowly;* at the same time the needle, which is always held medially, is withdrawn slowly so that the point scrapes over the vertebral body. In this manner the anesthetic solution is injected in an area corresponding to the position of the sympathetic trunk of the splanchnic nerves.

Surgical Approach. I prefer to do an extraperitoneal subdiaphragmatic neurotomy such as those studied and performed by Durante, Donati, Ciceri, Alessandri, Mingazzini, Valdoni and others. The patient is placed in the renal position, lying on the right side. An incision 15 to 16 cm. long is made, which begins from the paravertebral line, crossing the course of the twelfth rib, thus nearly forming an X. The latissimus dorsi muscle is divided, the rib is uncovered with a long incision of the periosteum, and its resection is extended subperiosteally. Valdoni prefers not to remove the rib, particularly if the patient is thin.

The incision of the deeper strata follows the direction of the costal bed. The perirenal fascia is detached manually (one thus frustrates bleeding), using as a guide the twelfth rib, and the body of the twelfth dorsal vertebra, attached to which one can identify the left pillar of the diaphragm.

The fat is removed from the bodies of the vertebrae, and the great splanchnic nerve is exposed. This is raised with a forceps and resected for an approximate length of 2 cm. Above this nerve lies the small splanchnic nerve, which runs obliquely downward and lateral to the left adrenal gland; this is also resected. Before suturing the deep structures one should explore the left adrenal gland to ascertain the presence of adrenaloma, either cortical or medullary.

The wound is finally sutured in layers, a tubular drain being left in the costovertebral angle.

COMMENT

The entire operation requires about one half hour. The preferred general anesthetic is ether, but for thin and nonmuscular patients a local anesthetic may be used. In ten days the patient is sufficiently recovered to be dismissed.

The arterial pressure, taken the day after the operation, with the patient in a relatively tranquil state, shows a fall of 5 to 10 cm. for the systolic pressure and 4 to 5 cm. for the diastolic pressure. Sometimes a few days or even a month may pass before an appreciable fall in the pressure can be noted. It is interesting to observe in the first days after the operation an improvement of many of the functional disturbances of the heart, of the brain and of vision. A patient with an old hemiplegia was able to resume his work and to ride a motorcycle.

Such a comparatively easy surgical intervention which never endangers the life of the patient, if well indicated (with absolute exclusion of cases with azotemia of more than 0.5 mg. per hundred cubic centimeters, and cases of chronic nephropathy, arteriosclerosis or cardiac insufficiency), appears today to be the only chance to save young individuals suffering from cerebral hemorrhages or from crises of left ventricular insufficiency and seems to be indicated in all cases in which there is precocious incapacity to work as a result of hyperpiesis.

Many of my patients who were operated on have been able to resume their habitual occupations after long periods of incapacity and after fruitless medical or physical treatment of the most modern and varied types, during which they entertained hope of amelioration for many years, which treatment had no decisive effects on the disease and on the symptoms of hypertension. Undoubtedly in time grave complications of the disease would have ensued.

SUMMARY

Treatment of essential hypertension by resection of the greater and the lesser left splanchnic nerve was proposed by

spite of minute examination of all the organs in question. Thus my attempts failed repeatedly. Physicians who had referred the cases to me as well as I myself were much discouraged. Meanwhile I changed the technic of injection, abandoning the procedure of Svetlow, White and Werber.

In spite of many failures I nevertheless achieved success in some cases (in agreement with the publications of Pende[1]). Two cases may be cited.

Case 1 (referred by Dr. R. Singer). Mr. I. suffered from typical hypertension. Cervical sympathectomy, with the use of paravertebral anesthesia induced by novocain and alcohol, was done on Nov. 29, 1937. No variation of the blood pressure followed. The next day intervention on the kidneys and adrenal glands by bilateral injection between the eleventh dorsal and the second lumbar vertebra, with paravertebral anesthesia induced by novocain and alcohol, performed in two stages, produced lowering of the blood pressure as measured by the Vaquez instrument from 25 to 15 points within several hours. The tension paroxysms which had recurred every week did not recur again until January 1938.

Case 2. Mr. F., a patient at the S. C. Canning-Child's Hospital, Vienna, had essential hypertension (the blood pressure was 29.5/19.5 [Vaquez]). The heart was decompensated. The urine showed numerous leukocytes, single and in groups, one or two erythrocytes to the field, and isolated epithelial cells. Paralysis of the cardiac sensory nerve tracts was induced by novocain and alcohol; this gave no results. An attempt to paralyze the splanchnic nerves by injection (between the eleventh dorsal and the second lumbar vertebra) resulted in lowering of the blood pressure. The injection made on Sept. 23, 1937, reduced the blood pressure to 28.5, that of September 25 to 23.5, that of September 29 to 22.5 and that of October 20 to 21 points. In January 1938, the blood pressure remained definitely at 19 points.

Comment. In this case, without any internal medication repeated injections in the splanchnic region reduced the essential hypertension to a tolerable point, at the same time improving the cardiac condition to the extent of almost complete disappearance of subjective symptoms.

I have observed several analogous cases.

Paralyzing the stellate ganglion and injection of the lumbar plexus never yielded lowered blood pressure readings. The aim of such injection treatment is to take the place of operations on the stellate and the retroperitoneal ganglions.[2] One must not forget that Horner's syndrome develops on injection of the stellate ganglion. The appearance of this syndrome shows that injection of the stellate ganglion has been successful. On this point I wish to refer to the monograph of Pélot.[3]

Medical literature contains frequent mention of the important centers for the treatment of hypertension, centers where the injection must be made. It also mentions that at times atypical anatomic relations are found which make the precise application of the injection difficult.[4] I believe that one should not overestimate the importance of these anatomic variations and should remember that if the injections are made under pressure the ganglions will be affected.

OPERATIONS ON THE THYROID

In regard to interventions on the endocrine glands and on the kidneys, one notes following such operations marked lowering of the blood pressure, which may be more or less persistent. These facts were noted by Jentzer, Brauker and others who have written on the subject.

In this connection I have made some experiments consisting of total extirpation of the thyroid. This surgical procedure is difficult, though I have succeeded in simplifying the technic. Several weeks after total extirpation of the thyroid one notes lowering of the blood pressure. The time of this lowering does not necessarily coincide with the first mild symptoms of myxedema. There is no relation between lowering of the metabolic rate and lowering of the blood pressure. The latt [illegible] not [illegible]

RIASSUNTO

Trattamento dell'ipertensione arteriose essenziale con la splacnicotomia sinistra

Nel 1924 Pende suggerì la resezione del grande e piccolo nervo splacnico di sinistra nella cura dell'ipertensione essenziale. L'operazione è limitata solamente nei casi di ipertensione nei giovani e negli adulti che non presentano manifestazioni di insuffizienza renale, nè azotemia, nè degenerazione marcata delle arterie.

Qualche volta l'anestesia locale con novocaine è sufficiente; ma l'anestesia generale è preferibile. La via d'approccio lombare extraperitoneale e consigliabile. Se l'anestesia con novocaine del nervo splacnico sinistro, eseguita il giorno precedente l'operazione, non porta L'abbassamento della pressione sanguigna, l'operazione è contraindicata. I risultati sono eccellenti nei casi bene scelti.

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NATIONAL ASSEMBLY OF THE INTERNATIONAL COLLEGE OF SURGEONS (UNITED STATES CHAPTER), FEBRUARY 12 AND 13, 1940, VENICE, FLORIDA. DR. FRED H. ALBEE, INTERNATIONAL PRESIDENT-ELECT, GENERAL CHAIRMAN. DR. FREDERICK DOUGLASS, PRESIDENT OF UNITED STATES CHAPTER, PRESIDENT AND CHAIRMAN OF PROGRAM COMMITTEE.

INQUIRIES ABOUT PAPERS, ETC., SHOULD BE ADDRESSED TO DR. CHARLES H. ARNOLD, EXECUTIVE SECRETARY, UNITED STATES CHAPTER, 908 TERMINAL BUILDING, LINCOLN, NEBRASKA.

APPLICATIONS FOR ASSOCIATE MEMBERSHIP, MEMBERSHIP AND FELLOWSHIP IN THE INTERNATIONAL COLLEGE OF SURGEONS MAY BE ADDRESSED TO THE OFFICE OF THE EXECUTIVE SECRETARY, DR. EDWARD FRANKEL, JR., 217 EAST 17TH STREET, NEW YORK CITY. THESE WILL BE ACTED UPON IN THE REGULAR ROUTINE AS OUTLINED IN THE BY-LAWS. APPLICATIONS FOR CONSIDERATION MUST BE RECEIVED NOT LATER THAN A MONTH PRECEDING THE REGULARLY STATED ASSEMBLY MEETING.

◆

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terventions. He emphasized the difference between experiments on animals and cases in man.

I myself have performed several such operations in Vienna. I presented the first case in which operation was performed for Buerger's disease before the Society of Physicians of Vienna on Oct. 20, 1933.[5] The patient recovered, and the cure lasted until 1937. At the same time a severe varicose ulcer was healed. Before operation the blood pressure was 20. The patient emigrated to Palestine, where he worked as a day laborer, but despite this heavy work the blood pressure never rose beyond 16 or 17. Since then in every case of Buerger's disease I notice the patient's blood pressure. I have rarely found this condition associated with pathologic hypertension. The following case is illustrative:

Mr. H., aged 35 years, who had been admitted to the S. C. Canning-Child's Hospital several months before for Buerger's endarteritis, had a blood pressure of 23/10.5 He had received epidural and splanchnic injections and injections of the lumbosacral plexus, after which the circulation in the diseased limb was improved. But there was no lowering of the blood pressure, the minimal lowering produced being due to injection shock Arteriography showed no therapeutic results. The chemical and mechanical treatment of the adventitia of the femoral artery was without benefit I did an arteriectomy according to the method of Leriche, the procedure which Leriche would interpret as an intervention on the sympathetic nervous system and ganglions. The excessive pain disappeared after the operation. The blood pressure was lowered from 22.5/10.5 to 17.5/10.5. After one month it was 16.5/10 and after two months 17/9 After three months it was 17/9.5 and remained thus for four months, after which I lost sight of the patient, who was an emigrant

One sees that the operation of Leriche can beneficially influence hypertension occurring in a young patient, but I cannot report numerous analogous cases.

COMMENT

I wish to reemphasize that cases of hypertension which come to the surgeon for relief are usually seriously advanced cases. One should always prefer injection to operation, if it is possible, of course after having closely examined the function of the organs where the injections are to be made. One should not forget surgical intervention on the thyroid and injection of the sympathetic ganglions. In such manner one will be able to benefit many patients, though the mechanism of the improvement is not yet very clear.

Admittedly this is only symptomatic treatment. But one must acknowledge that surgery must often content itself, in many cases, with therapeutic methods that can offer only symptomatic results (surgical intervention for various forms of carcinoma).

SUMMARY

In cases of malignant hypertension, the type which comes to the surgeon after medical measures have been exhausted, the interrelation of the endocrine glands, sympathetic nervous system and other factors must be considered. Mandl has treated hypertension by paravertebral injections of novocain and alcohol and by injections into the sympathetic nervous system, affecting the kidneys, heart and adrenal glands, with success in some cases. Total extirpation of the thyroid resulted in marked lowering of the blood pressure in his series. Sympathectomy for Buerger's disease has resulted in lowering of the blood pressure. Injection is always to be preferred to operation, but the potential benefits of the latter should be kept in mind.

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tem, the sympathetic nervous system and other factors play here. He must also take into consideration the interrelation of the numerous factors which might influence the blood pressure (the glands of internal secretion, the tracts of sensory nerves, the vegetative nervous system and vitamin factors). I am pleased to have been one of the first to have recognized the existence of this interrelationship.

In regard to the history of the surgical treatment, I was the first to perform extirpation of the parathyroids in a case of hypertrophy of these glands (1925-1926). I described the variation of the calcium and the phosphate metabolism which resulted in such cases and pointed out also the great influence of the parathyroids on the arterial tension. Of course, the influence of the other glands, for instance, the adrenal glands and the thymus, is no less important.

Ever since spinal anesthesia became an important aid to the surgeon (for several years) the problem of the fall in the blood pressure which occurs regularly under subarachnoid block has been studied, and it has been thought possible to make use of lumbar anesthesia to reduce pathologic hypertension. The advantages of such a procedure are questionable. Besides, it is too risky to attempt.

Elliott, in 1923, and Pende, in 1924, tried to treat hypertension by intervention on the splanchnic nerves. Donati, Durante, Camelot, Jeanneney and others followed their example. Section of the splanchnic nerves was done either by operation or by injection.

PARAVERTEBRAL INJECTIONS

Without knowledge of the publications of Pende and Elliott I have tried, in collaboration with Dr. Brunner (service of Professor Pal, of Vienna), to treat patients suffering from angina pectoris by paravertebral injections. The results encouraged me to use this treatment also in cases of so-called idiopathic hypertension. I proceeded in the manner suggested by Dr. Laewen (who used injection only for purposes of diagnosis and anesthesia). My observations follow:

Bruno M., aged 59 years, suffering from so-called idiopathic hypertension, was subjected to paravertebral injection (between the fourth and the sixth dorsal vertebra) on Nov. 11, 1925.

Mrs. Marie G., aged 67, also affected with so-called idiopathic hypertension, was treated by paravertebral injection (between the fourth and the sixth dorsal vertebra) given bilaterally, on Nov. 11, 1925.

Mrs. H., a victim of hypertension of the so-called idiopathic type, was given a bilateral paravertebral injection (between the ninth and the eleventh dorsal vertebra) on Dec. 1, 1925.

It may be noted that in 1925 I had not yet decided whether it was necessary to section the nerves of the heart, the kidneys or the adrenal glands.

Diminution of the blood pressure ensued regularly in the cases here cited, but it was not known whether this was not perhaps due to the effect directly attributable to the injection. Some time later I became convinced that this was due not to the injection shock but to the influence of the anesthetic solution on the vegetative or endocrine organs.

INJECTIONS AFFECTING ORGANS

I then decided to produce paralysis in certain forms of hypertension by anesthesia through injecting alcohol to affect the following: (1) *the splanchnic nerves, the rami communicantes, the sympathetic ganglions;* (2) *the kidneys;* (3) *the heart;* (4) *the adrenal glands.* My choice of the organ was clear in cases of angina pectoris (injection being made between the seventh cervical and the fourth dorsal vertebra, bilaterally). However, I found myself confronted by an almost inexplicable problem in the treatment of hypertension, in

SURGICAL TREATMENT OF ANGINA PECTORIS*

J. LOUIS RANSOHOFF, A.B., M.D., F.A.C.S.

CINCINNATI

BETWEEN 1933 and 1936, tempted by the glowing reports of Blumgart, Riseman, Davis and Berlin[1] and their results in the treatment of angina pectoris and congestive heart failure by total ablation of the thyroid, I operated on a number of patients and gave the procedure what I considered a fair trial. All new therapeutic methods, especially those for chronic and painful illnesses, are welcomed with enthusiasm and frequently are discarded after prolonged and careful trial.

I operated on twelve patients, with one death, an unusually small mortality. But, in my opinion, the theory of the treatment is entirely erroneous. It is based on the fact that the velocity of blood flow is largely influenced by the metabolic rate. When the metabolic rate is increased, the blood flow is accelerated, and vice versa. The purpose of total ablation of the thyroid is to so depress the metabolism that the tempo of life is reduced to a vegetative level, thereby reducing the work of the heart to a minimum degree, while the activity of the individual is so reduced that the attacks of angina, due to sudden mental or physical stress, are largely eliminated.

Analysis of the histories of the patients with thyroid ablation who come under my care I think will prove discouraging. I reported a few of these cases before the Western Surgical Association[2] and found some encouragement for continuance of the operation. This encouragement proved premature. The first results were rather startling, particularly in the cases of congestive heart failure with severe dyspnea. There are a remarkable improvement immediately following operation and a diminution of precordial distress. This result is so startling that I believe it to be due to the severance of numerous sympathetic fibers during the operation rather than to the removal of the thyroid gland. The improvement, however, was short-lived. It is sufficient to say that of all the patients operated on at that time, only one survives. This is the only case in which the operation could not be completed, because of injury to the recurrent laryngeal nerve during the first lobectomy.

In one remarkable case the patient lived nearly three years after thyroid ablation. This man had recurrent left hydrothorax, which required tapping every three to four weeks. Though the frequency of tapping was not reduced, the dyspnea was greatly relieved. Previously bedridden, he was able to go about and enjoy a modicum of life. It is probable that he was suffering from Pick's disease rather than congestive heart failure. We were planning to do a cardiolysis when death ensued. Unfortunately, a postmortem examination was not allowed.

There were four other cases in which improvement was striking. One man, previously a complete invalid, was enabled to go back to work and to take a vacation in the Rocky Mountains. But eight months after operation he died from heart failure. These temporary results, while gratifying, in my opinion are not sufficient justification for the operation.

The average duration of life following operation was only six months, the longest three years. All these patients needed thyroid extract to lead even the semblance of a normal life. I believe of myxedema. There is such lowering in cases of decompensated heart. The condition of the heart must always be checked by modern methods of examination. Absolute rest is not indispensable.

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* Read before the Milwaukee Society of Clinical Surgery, Oct. 25, 1938

The following cases are to the point:

Case 1. Mr. F. had suffered from a valvular lesion of the heart and failing compensation. After total extirpation of the thyroid there was lowering of the blood pressure from 22 to 18 points, where it remained for more than a year. The cardiac action was greatly improved.

Case 2. Mr. F. underwent total extirpation of the thyroid for angina pectoris. The blood pressure was lowered from 20 to 16 points; it remained unchanged for several months. The family physician reported that the patient does not have myxedema and that he feels well.

Case 3. Mr. S. had a mild myxedema following total extirpation of the thyroid. He received a tablet of thyrotoxin daily for one week. The blood pressure was 13/8 before the operation; some time after the operation it was 9/9.5.

Case 4. Mr. B. suffered from marked angina pectoris and Buerger's endarteritis. Total extirpation of the thyroid was followed by a mild myxedema. Marked improvement of the endarteritis and the angina pectoris occurred, although the patient has not had complete rest (he continued his work as a traveling salesman). The blood pressure fell from 20 to 10.5 points and remained there for months. Later there was a recurrence.

Case 5 (case of Professor Elias). Mr. R. underwent total extirpation of the thyroid for grave cardiac decompensation. He also suffered from bronchial carcinoma. The blood pressure fell slowly from 22.5 to 16 points. The cardiac condition improved noticeably; an electrocardiogram showed fairly regular cardiac action. After about six months the patient died of carcinoma. (The malignant growth had been treated by x-rays, and it may be that they had injured the heart.)

I must also mention the important observation of Max Schur (service of Prof. Julius Bauer, of Vienna), who attempted to explain the fall of the blood pressure following total extirpation of the thyroid. According to Schur, this lowering is due to a change in the iodine metabolism, the latter depending on hyperemia of the thyroid. If this hypothesis were proved, one could substitute for total extirpation of the thyroid a less drastic operation such as ligation of the thyroid arteries, although undoubtedly the effects of this procedure would be less lasting because the collateral circulation would be reestablished. Perhaps ligation of the arteries combined with partial extirpation of the thyroid would be more efficacious.

OPERATIONS AFFECTING THE KIDNEYS

Now a few words as to operations on the kidneys. The researches of Ludwig Braun and of his pupil Samet are interesting. These investigators operated on animals in which they had interrupted the renal nerves by injection of kaolin into the cisterna cerebellomedullaris, after which hypertension could not be induced by the experimental method of Dixon and Heller. Section of the renal nerve in man by mechanical means, chemical means (isophenol, according to the method of Doppler) or the use of both methods may be tried. I have seen such operations performed by Zinner at the S. C. Canning-Child's Hospital of Vienna. The mortality was rather high, because this procedure was carried out on young, seriously ill patients. No lasting recoveries were obtained, but the operation nevertheless deserves the attention of surgeons.

Extirpation of the adrenal gland has only theoretical interest. It is too radical to be considered seriously in the treatment of hypertension.

SYMPATHECTOMY

Operations on the sympathetic nervous system are based on the work of Brauker, Müller, Pende, Donati, Pieri, Mingazzini, Vincent Desorgher, Hermann, Sabadini and others. Resort is first had to paralysis of the sympathetic tract, then to successive extirpation of sympathetic ganglions. Leriche has reported some interesting facts on such indle and superior cervical cardiac nerves. The right superior cervical cardiac nerve enters the deep cardiac plexus and gives off a few branches to the anterior surface of the aorta. The left superior cervical cardiac nerve joins the superficial cardiac plexus. Both nerves arise from the superior cervical ganglions and communicate freely with the middle cardiac nerves and the superior cervical cardiac branch of the vagus. The right and left middle cervical cardiac nerves arise from the middle cervical ganglions and end on the deep cardiac plexus. The inferior cervical cardiac nerves arise from the inferior cervical ganglions and also terminate in the deep cardiac plexus, as do endings of the vagus. From the cardiac plexus, nerve fibers pass down along the aorta and are distributed to the auricles. From there they accompany the main coronary arteries along the auriculoventricular groove, forming the coronary plexus. From this plexus branches are given off to the ventricles.

All three cardiac nerves convey motor impulses to the cardiac plexus, but only the middle and inferior nerves transmit sensory impulses. All afferent impulses from the heart reach the spinal cord at the level of the first to the eleventh thoracic segments by way of the rami communicantes. It is of interest, in view of the various procedures advocated for the relief of pain, to note that extensive communications exist among the vagus and superior, middle and inferior cervical cardiac nerves. Further, there are afferent nerves which arise in the posterior cardiac plexus and connect with the upper fourth or fifth thoracic sympathetic ganglions without passing through any of the cervical sympathetic ganglions.

To summarize, all afferent impulses giving rise to the sensation of cardiac pain leave the heart by way of cardiac sympathetic nerve fibers and course to either the cervical or the upper thoracic sympathetic ganglions, and ultimately pass to the posterior horn of the spinal cord over myelinated fibers in the rami communicantes of the upper thoracic nerve roots only. In the cord they enter the spinothalmic nerve tracts and in this way reach the thalamus and cerebrum, where the pain is referred to the surface dermatomes supplied by the irritated dorsal root ganglions.

METHODS OF TREATMENT

There are two methods of interrupting the pain sensations in angina pectoris. One, sympathectomy, is complete removal of the left cervicothoracic chain, including the superior cervical, the medial cervical and the stellate ganglion. This is the method of Jonnesco.[6] The other method is paravertebral injection of the thoracic ganglion with alcohol. The question is, which of these methods is more successful?

Considered from an anatomic point of view, as demonstrated by Swetlow,[12] probably the most satisfactory method of interrupting pain sensations in the hands of the average surgeon is bilateral blocking of the dorsal ganglions from the first to the seventh, doing this at one session on both sides. In some cases Richardson and White[10] have been satisfied with a left unilateral injection. I have used this method in about ten cases, with fairly satisfactory results. According to White, who has done more of this work than any other American observer, it is a method which should have precedence over all others. Fine and Cutler collected a series of cases in 1929, in which they proved the results were better with the alcohol injection than with the sympathectomy. However, it is my belief that the results with injection are neither as definite nor as lasting as those with resection of the entire chain on the left.

Danielopolu[2] has advised a new operation, which is too complicated and hazardous. He believes [illegible]

RÉSUMÉ

Traitement chirurgical de l'hypertension

Dans les cas d'hypertension maligne, c'est-à-dire, la forme qui a résisté à tous les traitements médicaux, il importe de considérer l'interrelation des glandes closes, le système nerveux sympathique et d'autres facteurs. Mandl a employé des injections paravertébrales de novocaïne et d'alcool et aussi des injections dans le système nerveux sympathique, influençant les reins, le coeur et les surrénales. It a eu dans quelques cas d'excellents résultats. L'extirpation totale de la glande thyroïde a entraîné dans ses cas un abaissement notable de la pression sanguine. La sympathectomie a donné d'heureux résultats dans la maladie de Buerger. Il faut préférer l'injection à l'opération, mais il faut se rappeler que l'opération donne souvent d'excellents résultats.

ZUSAMMENFASSUNG

Chirurgischer Behandlung des hohen Blutdrucks

In Fällen von malignant Hochdruck, wie er vom Chirurgen gesehen wird, nachdem alle medizinischen Mittel erschöpft sind, ist de Beziehung zwischen endokrinen Drüsen, sympathischen Nervensystem und anderen Faktoren zu berücksichtigen. Mandl hat Hochdruck mit paravertebralen sowie mit Injectionen von Novocain und Alkohol in das sympathische Nervensystem, welche Nieren, Herz und Nebennieren beeinflussen, behandelt und war in einigen Fällen erfolgreich. Völlige Exstirpation der Schilddrüse hatte in seinen Fällen erhebliche Senkung des Blutdruks zur Folge. Exstirpation von sympathischen Ganglien in Fällen von Burger'scher Erkrankung war von Blutdrucksenkung gefolgt. Injectionen sind immer dem operativen Eingriff vorzuziehen, aber die grossen Möglichkeiten des letzteren sollten nie vergessen werden.

SUMARIO

Tratamiento quirurgico de la hipertensión

En casos de hipertensión maligna, el tipo el cual viene al cirujano despues de agotar todas las medidas médicas, la relación entre las glandulas endocrinas, sistema nervioso simpático y otros factores deben de ser considerados. Mandl ha tratado la hipertensión haciendo inyecciones paravertebrales de ñovocaína y alcohol y por inyecciones dentro del sistema nervioso simpático, con influencia sobre el riñon, el corazón y las glandulas suprarenales, con éxito en algunos casos. La extirpación total del tiroide resulta muchas veces en la baja de la presión arterial en estos casos. Simpatectomía hecha en casos de enfermedad de Buerger ha resultado en baja de la presión arterial. Las inyecciones deben de preferirce á la operación, pero los beneficios de ésta última deben de tenerse en cuenta.

RIASSUNTO

Trattamento chirurgico dell'ipertensione

Nei casi d'ipertensione maligna, cioè resistenti ad ogni terapia medica, è necessario considerare la interrelazione della ghiandole endocrine, il sistema simpatico ed altri fattori. Mandl, in questi casi d'ipertensione, ha usato iniezioni paravertebrali di alcool e novocaina, cioè iniezioni nel sistema simpatico dei reni, cuore e surrenali, con successo in qualche caso. L'estirpazione totale della ghiandola tiroide risultò in un abbassemento notevole della pressione sanguigna. Una caduta della pressione del sangue, viene ottenuta dopo la simpatectomia, nel morbo di Buerger. L'iniezione e preferibile all'operazione, ma quest'ultima, spesso, dà buoni risultati.

and the condition had remained unchanged to the time of admission. For seven years preceding the attacks he had been suffering from high blood pressure, for the relief of which he had consulted various physicians.

Examination showed an adipose man weighing 210 pounds, of ruddy complexion. The veins of the neck were distended. The patient assumed a stolid attitude and said that he was afraid to move for fear of bringing on an attack. There was evident dyspnea. The heart measured 11 by 3 cm.; the rate was 84 and regular, and there were no murmurs. The blood pressure was 160/98. The electrocardiogram showed a hypertrophied heart. A 7 foot x-ray showed tremendous enlargement of the left side of the heart and dilatation of the aorta. Pulmonary examination gave negative results. The Wassermann reaction was negative The diagnosis was (1) angina pectoris, (2) arteriosclerosis, (3) myocardial degeneration and (4) dilatation and hypertrophy of the heart

During the three weeks subsequent to admission, the patient's condition remained unchanged. In spite of the rest, there were frequent attacks of angina, which were relieved by codeine and morphea. The attacks occurred as often as fifteen to twenty times a day. I consider this a true case of status anginosis.

On March 10 a left cervicothoracic sympathectomy was done. The usual Horner syndrome followed. The patient was out of bed in a week, and after a month returned to his trade, that of a tailor, for the first time in two years.

This patient lived in complete comfort and was able to continue his work for seven or eight years. He suffered no recurrence of pain, and died of cardiac failure in 1935, eleven years after operation.

CASE 2 M.E., a woman aged 53, was admitted June 10, 1924 Her chief complaint was severe attacks of pain in the heart, radiating down the left arm, for the last five years The attacks came on at varying intervals, from several times a day to once or twice a week, at time remaining absent for a month. During the attacks she had the sense of impending death She described the pain as gripping and radiating down the left arm to the finger tips. The attacks were at times relieved by the administration of amyl nitrite, at other times requiring morphea

Physical examination showed a rather corpulent woman with no thyroid enlargment, with dilatation of the cervical veins and evident carotid pulsation There was slight dyspnea on exertion The heart was enlarged; a slight systolic murmur was heard over the apex and base but was not transmitted. The apex beat was palpable at the fifth interspace, 12.5 cm to the left of the midline At the third interspace the right border was 5 cm, and the left border 7.5 cm., from the midline The blood pressure was 227/115.

A 7 foot x-ray showed hypertrophy of the heart and dilatation of the aorta The Wassermann reaction was negative. The diagnosis was (1) hypertension with arteriosclerosis, (2) cardiac hypertrophy, with possible mitral insufficiency, and (3) angina pectoris

During the week before operation, when the patient was in the hospital, there were several attacks of angina On June 17, with local anesthesia induced by 1 per cent novocain, a left cervicothoracic sympathectomy was done, without incident The following day there were enophthalmos, slight reddening of the conjunctiva and contraction of the left pupil. The patient was out of bed on the fifth day after operation and was discharged on the fourteenth day. During this time there were no anginal attacks

Examination on October 26 showed slight enophthalmos and narrowing of the left palpebral fissure. The blood pressure was 198/120 There were still dyspnea on exertion and at times a sense of fulness in the precordial region. Since the operation there has been complete freedom from attacks of angina. The patient was observed until 1932, during which period there was no recurrence. Since then she has died, after an observation time of six years.

CASE 3. M R., a man aged 62, has had several attacks of angina for the past six months. These are growing more frequent, sometimes occurring four or five times a week, and must be controlled by morphea He is well developed and well nourished The electrocardiogram showed inversion of the T wave X-ray examination of the heart showed no enlargement. The blood pressure was 130 and rose to 170 during attacks

On July 9, 1928, a left cervicothoracic sympathectomy was done The superior, middle and inferior ganglion were removed Following operation he had no attacks of pain, and was discharged from the hospital on the twelfth postoperative day The heart examination by his physician in 1930, 1932 and 1937 showed no progression of the arteriosclerosis

The patient remained free from pain from the time of operation until 1934, a period of six years. During the last three years he has developed senile eroticism, becoming much aroused at night. During these mental attacks he has some pain in the chest, but his that any method of treatment which results in an average prolongation of life of only six months after a distressing operation is not worth while and should be discarded.

In 1923, at a meeting of the Western Surgical Society, I reported several cases of cervicothoracic sympathectomy for the relief of pain in angina pectoris. During the intervening years I have operated in a few of these cases and have followed the results with a great deal of interest and, in some instances, astonishment.

The heart and aorta, like the abdominal viscera, carry on their function during health without appreciable sensation. It is only in disease that visceral sensation is transmitted to the central nervous system in the form of pain.

The sufferers from angina pectoris may be classed in two categories—(1) those who have occasional attacks of pain and (2) chronic cardiac invalids. In the first group the pain may be controlled by administration of nitroglycerin or allied drugs, or even an occasional dose of morphea. These individuals may lead a fairly comfortable life without undue interference with their normal activities. They are not under the constant threat of agonizing pain, which may follow any unusual physical or mental stress. They should not be considered candidates for surgical intervention but should be kept as long as possible under a medical regimen.

In the second class of patients with angina pectoris, the chronic cardiac invalids, the attacks of angina are severe, frequent and unpredictable. They may occur once daily or, in some cases, as often as ten or fifteen times a day, constituting what is known as status anginosis. Fear of impending death is associated with the attacks. It is unfair to condone such suffering when there is a method of definite relief. This method is not only comparatively free from danger but brings surcease from suffering and prolongs life far beyond the span which medical treatment can promise.

The choice of cases for operation must be made after careful collaboration by the cardiologist and the surgeon. The question is not "Is the case too severe for operation?" but rather "Is it mild enough to be benefited by a medical regimen?" No cases, except those of persons suffering from cardiac failure, are too severe for surgical treatment. Even a patient in status anginosis is a candidate for surgical intervention or injection.

In order to discuss the surgical treatment of angina pectoris it is necessary first to review the location and distribution of the pain to obtain some information as to the nerve pathways involved. Generally the discomfort begins under the upper or middle sternal region, and then in many cases, it radiates out toward the arms (more frequently the left arm), involving the ulnar side of the forearm, and into the ring and little fingers. Far less common is radiation to the neck and face, especially to the jaws. Occasionally there is radiation to one or both shoulders, to the infraclavicular regions or to the epigastrium.

What the surgeon is interested in is the means of producing interruption in the pathway over which the pain impulses from the heart pass to reach the central nervous system, where they are referred to the regions described. Therefore knowledge of these pathways is essential in the understanding of the application and technic of surgical and injection procedures for the relief of angina pectoris.

All afferent impulses giving rise to the sensation of cardiac pain leave the heart by cardiac sympathetic nerve fibers, coursing to the cervical and upper dorsal sympathetic ganglions. The nerve fibers arise in the superficial and deep cardiac plexuses, both of which are brought into contact with the sympathetic system through the inferior, mid-they prove my point that cervicothoracic sympathectomy must remain an accepted treatment for angina pectoris.

SUMMARY

Severe angina pectoris, which is not relieved by medical treatment, should be treated surgically. Total ablation of the thyroid has not proved successful in the treatment of angina pectoris and should be abandoned. Remarkable results are achieved by either dorsal root injection with alcohol or cervicothoracic sympathectomy. Both these methods are comparatively safe—with the cessation of pain, the life span is increased. Cervicothoracic sympathectomy gives more lasting relief from pain.

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RÉSUMÉ

L'Angine de Poitrine: Traitement Chirurgical

L'angine de poitrine grave quand elle ne répond pas au traitement médical demande d'être soignée chirurgicalement. L'ablation totale de la glande thyroïde n'a donné aucun succès dans le traitement de l'angine de poitrine et doit être abandonnée. On a obtenu des résultats remarquables par les injections d'alcool dans les rameaux dorsaux et par la sympathectomie cervicothoracique. Ces deux méthodes sont relativement sans dangers:—la suppression de la douleur prolonge la durée de la vie. La sympathectomie cervicothoracique donne une suppression de la douleur pour une plus longue durée.

ZUSAMMENFASSUNG

Angina Pectoris: Chirurgische Behandlung

Schwere angina pectoris, die durch medizinische Behandlung nicht gebessert werden kann, sollte chirurgisch angegangen werden. Totalentfernung der Schilddrüse als Behandlung der Angina pectoris hat sich als nicht erfolgreich gezeigt und sollte nicht mehr angewandt werden. Bemerkenswerte Resultate sind sowohl bei der Einspritzung von Alkohol in die hinteren Wurzeln als auch bei der cervicothorakalen Sympathektomie erzielt worden. Diese beiden Methoden sind verhältnismässig sicher; mit dem Aufhören der Schmerzen wird die Lebensdauer erhöht. Cervicothorakale Sympathektomie bringt längerdauernde Befreiung von Schmerz

SUMARIO

Tratamiento de la angina pectoris

Severa angina pectoris, la cual no se alivia con tratamiento médico debe ser tratada quirúrgicamente. Ablación total de la tiroide no ha probado ser satisfactorio en el tratamiento de angina

ruption of the cardiac accelerator pathways which transverse the stellate ganglion and inferior cardiac nerve is dangerous, but I have seen no evidence of this. This is proved by the experimental work of Schauer, Gross and Blum,[11] who ran two series of experimental ligature of the anterior coronary artery. One series of animals were subjected to bilateral stellate ganglionectomy prior to ligature. Part of these authors' conclusions are germane to this discussion: i. e., the incidence of auricular fibrillation and the immediate mortality rate were lower in the ganglionectomized dogs.

In the early days of sympathectomy McKenzie feared that in the absence of the danger signal of pain the individual would be tempted to hazardous overactivity. This has not been borne out, as even in the absence of pain overexertion results in a sense of distress or tightness in the precordium. Levine and Newton[7] stated: "It is not impossible that freedom from attacks actually retards the underlying process. It is conceivable that repeated spasms produce or speed up the coronary sclerosis that eventually leads to infarction; and that when the operation is successful, the vicious cycle is broken and longevity increased."

In the cases in which I have done alcohol injections there are several outstanding disadvantages. It is possible that the technic I used, which follows that of Swetlow[12] exactly, is not perfected. One of the worst sequelae of injections is the frequent occurrence of intractable intercostal neuraglia, which was noted in about 25 per cent of my cases. Two patients needed constant administration of opiates until death, which followed in one case in six months and in the other in eight months. The method of injection is not without danger. Paul White reported three deaths in thirty-five cases in which alcohol injection was used.

It is unnecessary to describe the technic of sympathectomy. Suffice to say, it is done under local anesthesia. While the operation requires careful anatomic dissection, it is not unduly difficult or prolonged.

It is possible that a later method, reported by Paraf and Dreyfus LeFoyer[8] may be the answer. They present the case of a woman 71 years old who for six months had been suffering from attacks of angina pectoris. Cardiovascular examination revealed aortitis with a systolic murmur at the base and gallop rhythm at the apex. The blood pressure was 180/80. The authors resorted to anesthesia of the stellate ganglion by the paravertebral route. The result was remarkable: For several weeks the patient had no attacks. A repeated injection was followed by similar results. Four months after this injection the patient had a cholecystectomy done without incident.

The same technic was used by Coleman and Bennett[2] for the control of paroxysmal tachycardia of such long duration that a fatal outcome seemed inevitable.

In the event that the ganglion has been properly located and injected, there should be evidence of interruption of the sympathetic - parasympathetic balance producing Horner's syndrome.

In the face of all evidence of the success of alcohol injection for the treatment of angina, it is necessary to report individual cases in detail to prove my contention that left cervicothoracic sympathectomy is a method of treatment which should not be discarded.

REPORT OF CASES

CASE 1. B.S., a man aged 52, was admitted to the Jewish Hospital Feb. 16, 1924, complaining of pain in the chest and shortness of breath. He first consulted his physician the previous year, because of exceedingly severe attacks of angina pectoris, which were relieved only by the administration of morphea. These attacks occurred at various intervals, sometimes daily, sometimes once or twice a week,

ANALYSIS OF 537 HYSTERECTOMIES*

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As the mortality of an operative procedure declines, the indications for its employment rise. When two operations accomplish practically the same purpose, that having the lower mortality is the one more generally used. A number of factors have made abdominal surgery much safer today than formerly. Chief among these are standardization of principles of surgical technic, the great improvement in anesthesia and more critical preoperative study and treatment of the patient.

Herewith is presented a study of a series of 537 hysterectomies done from September 1930 to September 1938. Five hundred and nineteen of these were supravaginal, 16 total and 2 vaginal. The small number of vaginal operations is accounted for by the fact that thirty years ago, following the trend of the times, the writer did many hysterectomies and removed pathologic adnexa by the vaginal route. The results obtained by abdominal section during the past twenty years have given no justification for returning to the vaginal approach. Sixteen total hysterectomies is a small number when compared with the number of more radical operations done today. The explanation lies in the fact that I believe the majority of cervixes that might suggest the total operation can be as effectively treated by postoperative cauterization or by radium.

During this period of eight years, a total of 1,266 patients with either uterine tumor or functional bleeding were treated. Seven hundred and twenty-nine (57.6 per cent) were treated by curettage and radium, and the present series of 537 (42.4 per cent) by hysterectomy. Of the 729 treated by radium, 241 had small bleeding fibroids. As I am concerned only with the hysterectomies, the cases in which radium was used will not be discussed.

Of the 537 hysterectomies, 448 were for fibroids. The 448 patients treated by hysterectomy, together with the 241 treated by radium, give a total of 689 with fibroids treated during the eight years. Of the fibroids removed by hysterectomy but not complicated by adhesions, 156 were smaller than a three months' pregnancy; 83 varied in size from a three to a six months' pregnancy, and the remaining 59 were all larger than a six months' pregnancy.

TABLE 1

INCIDENCE OF VARIOUS CONDITIONS IN 537 CONSECUTIVE HYSTERECTOMIES PERFORMED FROM SEPTEMBER 1930 TO SEPTEMBER 1938

Pathologic Changes in the Uterus	*No of Cases*	*Percentage*
Fibromyoma	448	83.4
Incidental Changes in All Cases		
Endometrial hyperplasia	175	32.6
Adenomyosis	127	23.6
Atrophic endometritis	96	16.0
Adenocarcinoma	43	8.1
"Metritis"	12	2.2
Sarcoma	3	0.5

In the entire series of hysterectomies, 175 uteri (32.6 per cent) showed endometrial hyperplasia; in 127 (23.6 per cent) adenomyosis was found; 96 (16 per cent) had an atrophic endometrium. There were 43 cases of corpus carcinoma and 5 of ovarian carcinoma; 31 cases were associated with endometriosis, and finally there were 12 cases (2.2 per cent) of so-called metritis. With the exception of the cases of metritis, which was diagnosed clinically, physician does not think this is true anginal pain, as it lacks the severity or reflection of the pain to the arm, and there is no fear of death.

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* Read at the Second Annual Assembly of the United States Chapter of the Internat [illegible] of Surgeons, Philadelphia, Oct 13, 1938.

CASE 4. M.L., a man of 62, about three years prior to admission had attacks of pain in the right precordium, within the range of the third to the seventh costal cartilages. After six months this pain shifted to the left, and there has been no recurrence on the right. In the beginning the pain was relieved by nitroglycerin. Later it was typical anginal pain, referred down the left arm. The attacks increased in frequency and now occur several times a day and also at night. The electrocardiogram showed an inverted T wave in the third lead. An x-ray showed moderate cardiac enlargement. The blood pressure was 132/88; the sounds were normal.

On Aug. 22, 1933, a complete cervicothoracic sympathectomy was done by my associate, Dr. Joseph D. Heiman. This was followed by Horner's syndrome. The patient was discharged on the eighth postoperative day. He is still living, without recurrence of pain, five years after operation.

CASE 5. J.L., a man aged 63, has had severe anginal pain for the past eighteen months. In the beginning the attacks were infrequent and occurred after unusual physical effort, but they have increased in frequency and severity and occur several times a day and at night. There is a continuous vise-like pain over the precordium, even between attacks. There is severe dyspnea on exertion; the heart is enlarged. The electrocardiogram showed marked left ventricular preponderance and a sharp inversion of the T wave in the first lead. An x-ray revealed left ventricular hypertrophy and moderate dilatation of the thoracic aorta.

On Dec. 14, 1935, a complete left cervicothoracic sympathectomy was done. There was immediate development of the Horner syndrome. Following operation there was no recurrence of pain. The patient died a year later from heart disease. During his entire illness there was no recurrence of pain.

CASE 6. I.A., a man aged 57, was admitted Feb. 16, 1935. A year before, I did a complete gastrectomy for carcinoma of the stom[illegible] He now complains of severe precordial [illegible] and attacks of pain radiating down [illegible]. These attacks recur with great [illegible] sometimes as often as five or six times daily.

Abdominal examination, including x-ray study, showed no recurrence of carcinoma. Auscultation revealed a loud systolic murmur at the apex. The blood pressure was 140/80. The electrocardiogram showed an auricular ventricular conduction time just within normal limits, with a complex of low voltage in the first and third levels. The diagnosis was (1) arteriosclerotic heart disease, (2) coronary sclerosis, and (3) angina pectoris.

On July 25, a complete left cervicothoracic sympathectomy was done. Following operation there was Horner's syndrome. The pain was immediately relieved and did not recur until death, eight months later, from metastasis to the liver.

The patient's son, an intern, told me that his father was completely comfortable until his death.

CASE 7. M.M., a man aged 59, was admitted Nov. 18, 1937. He has been in the hospital numerous times in the past two years, each time suffering from an accentuation of severe angina pectoris. These attacks now completely disable him. They occur as often as ten times a day. He can walk only a few steps without stopping, because of the severity of the pain in the chest, which begins in the precordial region and is reflected down the left arm. The attacks are complicated by a carotid sinus complex of great severity, with a sense of faintness and dizziness.

Examination showed a rather well developed and well nourished man. The blood pressure was 140/90. Examination of the heart showed no adventitous sound. The electrocardiogram showed nothing noteworthy. By pressure on the carotid sinus an immediate syncope is brought on.

In view of the irritable carotid sinus, it was deemed inadvisable to do a sympathectomy without a preoperative test. Therefore, on November 24 a paravertebral block of the upper fifth dorsal ganglions was done, with 1 per cent novocain. Immediately following this there were cessation of attacks for about two days and an evanescent Horner's syndrome. As the carotid sinus complex did not seem to be increased in severity by the paravertebral nerve block, it was deemed safe to do a sympathectomy, which was performed under local anesthesia on November 29. Following operation there were Horner's syndrome and complete cessation of pain.

This patient has regained a fair amount of activity. He is able to walk several blocks and has returned to work. He still complains of some sense of discomfort around the heart, but there is no pain.

Comment on these casis is unnecessary, as they speak for themselves. I think, however, of well-being. Many times the cause of such a temperature cannot be determined. If after ten days or two weeks such a temperature subsides, the surgeon can only guess as to its cause. Should, however, a femoral thrombosis develop or pulmonary infarcts or embolism occur, the diagnosis is obvious. These end-results follow extensive thrombosis of the pelvic veins, and the clot formed is of the type that breaks up easily. It is generally conceded that femoral thrombosis and pulmonary embolism occur most frequently following hysterectomy for fibroid tumors, and that the larger the tumor the more likely it is that thrombosis will result. This is reasonable, as the larger tumors have larger veins, and these veins may more easily become infected or be more easily transfixed by a suture in the removal of the tumor. A number of suggestions have been made relative to the prophylaxis of pelvic thrombosis. It is difficult to understand how one may expect much benefit from urging the patient to sit up early following a hysterectomy or from the patient's moving her legs or doing other exercises in bed. In the writer's experience, the clinical evidences of thrombosis are seen less frequently than formerly. The writer ascribes this to the fact that the uterine artery and veins of each side are secured in a single ligature. A considerable mass of tissue that contains the vessels is clamped on each side of the cervix. The clamped tissue is cut from the cervix, and a ligature is placed by passing a needle close to the cervical stump to avoid puncturing a vein. The mass ligation that includes artery and veins reduces the danger of an infection from the cervix extending to the clot. In only 13 of the 537 hysterectomies was there positive clinical evidence of thrombosis. Eight of these patients had femoral phlebitis, 4 had pulmonary infarcts and 1 a fatal pulmonary embolism. There were a number of instances of probable pelvic thrombosis that gave no definite indication of its presence and did not present sufficient evidence to justify a positive diagnosis.

TABLE 2

POSTOPERATIVE COMPLICATIONS IN THE 537 CONSECUTIVE HYSTERECTOMIES*

Condition	*No. of Cases*	*Incidence, Percentage*
Suppuration	28	5.2
Incision	20	3.7
Subcutaneous	17	3.1
Subfascial	3	0.5
Cervical Stump	8	1.5
Urinary Tract Conditions	21	3.9
True Cystitis	16	3.0
Pyelonephritis	5	0.9
Thrombosis and Embolism	12	2.2
Appreciable Thrombophlebitis	7	1.3
Small Pulmonary Infarcts	5	0.9
Atelectasis	5	0.9
Pleurisy	5	0.9
Pneumonia	0	0
Intestinal Obstruction†	5	0.9
Partial	3	0.5
Complete	2	0.4
Coronary Occlusion‡	1	0.3

* These 77 complications appeared in 68 (12.77 per cent) of the 537 cases

† Two patients were opened, all five recovered

‡ Sixth postoperative day.

In connection with infection from the cervix must be mentioned an occasional infection that may occur beneath the peritoneal flaps covering the cervical stump. In the 519 supravaginal hysterectomies, it occurred 8 times. Aside from the rise of evening temperature, there was no indication of its presence. Only once have we been able to diagnose the condition by examination. In this instance the cervix was opened and the abscess drained. Usually after ten days or two weeks of such temperature, a moderate quantity of foul-smelling vaginal discharge occurs, and a return to normal temperature will establish the diagnosis. The germ recovered is an anaerobic streptococcus. To eliminate cervical infection, coning out the canal, carbolic acid and the actual cautery have all been tried b
the writer. In none of the [illegible] nt [illegible],
was any of these agencie [illegible]
the results are as go

grande severità e non migliorata dal trattamento medico dovrebbe ricevere il beneficio dal trattamento chirurgico. L'ablazione totale della tiroide non ha dato risultati soddisfacenti e davrebbe essere abbandonata. Risultati rimarchevoli sono stati ottenuti dall'iniezione di alcool nelle radici posteriori o dalla simpatectomia cervicotoracica. Questi metodi sono comparativamente poco pericolosi. Con l'attenuazione o scomparsa della crise dolorifiche la vita è prolungata. La simpatectomia cervicotoracica da risultati più duraturi.

* * *

Prof. G Viola was retired at his request from the department of clinical medicine of the University of Bologna. Prof. A. Gasbarrini, of Padua, has been appointed to succeed him.

* * *

Prof. J. R. Learmouth, of Aberdeen, has been appointed to the faculty of surgery of the University of Edinburgh.

* * *

Prof. P. Santy has been named ordinarius of operative surgery in the University of Lyon.

* * *

Prof M Bufano, of Sassari, has joined the faculty of clinical medicine of the University of Parma

* * *

Prof. J. Garcia Otero has been appointed ordinarius of clinical medicine in the University of Montevideo

Prof. Bondet, of the department of medical pathology and materia medica of the University of Montpellier, has been appointed to the chair of pediatrics.

* * *

Prof. R. P. Dustin, of the department of pathologic anatomy of the University of Montpellier, has been invited by the Belgian government to act as exchange professor.

* * *

Dr. Hyman I. Goldstein, of Camden, N. J., was elected president of the Northern Medical Association of Philadelphia for 1939.

* * *

Dr. W. C. Alvarez and **Dr. G. B. Eusterman,** of the Mayo Clinic, were elected corresponding members of the Society of Gastroenterology of Paris (Dec. 12, 1938).

employed. In 19 others of our series a median incision was used because of (1) a tumor extending to the ensiform process or (2) the possibility of difficulty in delivery of a tumor suspected of having high and firm abdominal adhesions. The transverse incision gives perfect approach to the pelvis, and incisional hernia never occurs. All bleeding vessels, however, must be carefully tied, and especially must great care be observed to ligate two to four muscular branches of the deep epigastric artery at the points where they emege from the muscle to enter the transversalis fascia.

The mortality for simple hysterectomy in experienced hands has almost reached the vanishing point. In the entire series of 537 hysterectomies there were 5 deaths, a mortality rate of 0.93 per cent. The last death occurred in May 1934, since which time there have been 317 hysterectomies without a death.

REPORT OF FATAL CASES

CASE 1. A widow aged 42 entered the hospital for removal of a grapefruit-sized bleeding fibroid. Preoperative examination showed no abnormal findings except a blood count of 3,080,000 red cells, with hemoglobin 70 per cent. Avertin-nitrous oxide anesthesia was used. The fibroid was simple and easily removed. The patient stopped breathing while the abdomen was being closed. Respiration was reestablished, and she was put to bed in improved condition. Two hours after operation, she exhibited tonic spasms of the arms and legs. During the next few days these recurred, and her mind became clouded. A neurologist diagnosed anoxemia. The patient died on the twelfth postoperative day. At autopsy the brain showed typical areas of cerebral necrosis of anoxemia.

CASE 2. A colored woman aged 56, weighing 195 pounds, with a blood pressure of 208/110 and a hypertensive heart, had a large tumor mass filling the pelvis and extending to the umbilicus. Preoperative studies showed urine with albumin 1+, and hyaline and granular casts.

On operation, four days after admission, with use of avertin and nitrous oxide anesthesia, a grapefruit-sized, interligamentous fibroid was found, with extensive adhesions to the pelvis. There were two large cystic tumors, firmly adherent and shown to be bilateral hydrosalpinx. The patient died the sixth day after operation. Autopsy showed acute fibrinopurulent peritonitis, and chronic interstitial nephritis with acute nephritis superimposed. Culture of abdominal tissue showed Staphylococcus.

CASE 3. A woman aged 64 had daily vaginal bleeding for eight months. The blood pressure was 210/130. On examination a diagnosis of corpus carcinoma was made; the uterus was the size of a large orange. At operation the cervix was found to be involved also, and the base of the bladder was infiltrated. The uterus, with as much as possible of the carcinomatous cervix, was removed. The patient sat up in bed on the thirteenth day, but died suddenly two hours later. Autopsy showed massive embolus of both pulmonary arteries.

CASE 4. A woman aged 32 had irregular vaginal bleeding for six months. Examination showed a nonadherent, retroverted uterus, enlarged by a small fibroid, with a right cystic ovary. Supravaginal hysterectomy, with removal of the right ovary, was done. Clinically the condition conformed to virulent septic peritonitis. Death occurred after 72 hours. Culture of peritoneal tissue showed a virulent streptococcus.

CASE 5. A woman aged 74 who had a blood pressure of 195/115 and whose heart was enlarged, with a marked to-and-fro systolic murmur, had a tender mass extending above the symphysis pubis. Operation was performed in May 1934 for an orange-sized, necrotic adherent ovarian cyst. This cyst was removed without rupture, and a hysterectomy was done because of the marked enlargement of the uterus. After operation there was almost complete urinary suppression, which was unresponsive to treatment. Death from uremia occurred on the third day. No autopsy was permitted.

Only a relatively small percentage of the cases in this series would have been suitable for vaginal hysterectomy. The reasons for this are: the size of the fibroids, the presence of adnexal pathology or the fixation of the uterus in the pelvis by adhesions. [illegible] cases here reported, [illegible] been suitable for [illegible] all others are here listed as reported by the pathologic laboratory.

Metritis, just referred to, is a misnomer. There is little reason to believe that inflammation plays any great part in its occurrence. It is true that the pathologist finds in some of these cases definite hypertrophy of the uterine wall and sclerosis of the arteries. In other cases no characteristic pathologic change is found. There are clinical indications, however, of this condition. The patient complains of pelvic pain which is intensified on walking, riding in an automobile, or by any jar occasioned in stepping down. It is on examination, however, that the criterion for diagnosis is obtained. The uterus is always found to be markedly tender to pressure. When the body of the uterus is pressed between the fingers during bimanual examination, the patient states that her pain is reproduced. Usually the adnexa are not tender. The fact that many of these cases present no constant pathologic feature suggests that at least in some of them the condition is an expression of uterine hyperesthesia and not necessarily due to pathologic change. Whatever the causative factor may be, hysterectomy, in my experience, is the only means of effecting a cure.

Adenomyosis has long been recognized as a comparatively common condition, and this is confirmed by the fact that 127 uteri of the 537 removed showed this condition. There is still discussion as to why and how adenomyosis develops. There are no pathognomonic symptoms or physical findings by which it is possible to diagnose clinically the condition in every case in which the pathologist finds it. Of the several theories advanced to explain its occurrence the writer is inclined to agree with Sampson's view that the endometrial cells are implanted in the uterine wall.

In this series of hysterectomies there were 175 (32.6 per cent) instances of endometrial hyperplasia. In a series of small fibroids treated by radium the writer found 71 per cent associated with hyperplasia. The lower percentage of hyperplasia in the present series is due to two reasons: (1) Many of the hysterectomies were done for conditions other than fibroids, and (2) most of the fibroids treated by hysterectomy were much larger than those treated by radium. In the larger fibroids, naturally, hyperplasia is not common.

In the 31 cases of endometriosis the condition was principally of the ovary. Chocolate cyst of the ovary predominated, but in some cases there was a generalized pelvic distribution of endometrial implants with the usual firm adhesions.

There has been a decrease of postoperative accidents and complications in the past few years. It is generally agreed that postoperative thrombosis associated with infarction or pulmonary embolism occurs more frequently following pelvic operations than operations involving any other part of the body. Much has been written on thrombosis, and various explanations for its occurrence have been suggested. The number of causes that have been ascribed as either contributory or specific testify to the uncertainty as to its etiology. I believe that obstetric thrombosis and thrombosis following pelvic operations are due to infection in the vast majority of instances. In the case of surgical intervention, it may be due, though much less frequently, to transfixion of a vein. In considering morbidity from thrombosis, the surgeon too frequently believes that it is only when pulmonary infarction, embolism, or femoral phlebitis occurs that he is justified in diagnosing pelvic thrombosis. I am much concerned when a patient, after a hysterectomy, has a persistent but slight rise of evening temperature, often with a normal pulse and a feeling

schriebenen 537 wurden wegen Myomen vorgenommen.

Der Autor glaubt, dass Thrombosis, die nach geburtshilflichen Eingriffen oder Beckenoperationen auftreten, auf Infektion zurückzuführen sind. Infektion unterhalb der Peritoneumlappen, die die Cervix deckten, trat in 8 Fällen auf. Postoperative Pneumonie trat keinmal, Pleuritis 5 mal und Teilkollaps der Lungen 5 mal auf.

Mortalität in den gesamten 537 Fällen: 5 Fälle (0.93%). Der letzte Todesfall unterlief in Mai 1934; seitdem wurden 317 Gebärmutterexstirpationen vorgenommen ohne einen einzigen Todesfall.

SUMARIO

Analisis de 537 histerectomias

Una serie de 537 histerectomias hechas por el autor durante un período de ocho años es reportada. La proporción pequeña de 16 histerectomias totales es explicada por la creéncia del autor que el cuello puede ser tratado pre ó postoperativamente cuando otras enfermendades que no sean carcinoma existe. La experiencia de hace treinta años del aproche vaginal en las condiciones de la pelvix y los resultados obtenidos ahora á travez del aproche abdominal no justifica el volver al método de aproche vaginal. En ésta serie hubieron 535 incisiones abdominales. El autor usa la incisión transversal para todas las operaciones de la pelvix. De 537 operaciones, 448 fueron hechas por fibromas.

El autor cree que la embolia obstetrica y trombosis seguida operación de la pelvix son debidas á infecciones. Infección debajo del colgajo peritoneal cubriendo el cuello ocurrió en ocho enfermos. No hubieron casos de pneumonia postoperativa; hubieron cinco casos de pleuresia y cinco de colapso parcial del pulmón. La mortalidad en los 537 casos fué de cinco (0.93 por ciento). La ultima muerte ocurrió en Mayo de 1934, y desde entonces han habido 317 casos de histerectomias sin una muerte.

RIASSUNTO

Analisi di 537 isterectomie

Viene riportata una serie di 537 isterectomie eseguite dall'autore durante un periodo di 8 anni. La piccola percentuale di 16 isterectomie totali è dovuta al fatto che l'autore crede che la cervice può essere trattata pre- o postoperativamente, quando esiste una condizione patologica che non sia carcinoma. L'esperienza di 30 anni nelle operazioni pelviche per via vaginale e i risultati ottenuti con quelle per via addominale non giustifican il ritorno delle prime. In questa serie vi sono 535 incisioni addominali. L'autore usa l'incisione trasversa in ogni operazione pelvica. Di 537 operazioni, 448 furono eseguite per fibroma. L'autore crede che la trombosi ostetrica e la trombosi secondaria a operazione pelvica, sono dovute a infezione. Infezione sotto la membrane peritoneali che coprono le cervice apparve in 8 malate. Nessun caso di polmonite postoperatoria è ricordato; 5 casi di pleurite e 5 casi di collasso parziale polmonare sono riportati. Le mortalita nei 537 casi è di 5 (0.9 per cento). L'ultimo decesso occors nel Maggio 1934. Da questa data, 31 isterectomie furono eseguite senza esi fatali.

than when they have been. Cauterization of the cervix I would condemn, as it leaves a necrotic area that favors infection.

TABLE 3

FATAL CASES IN THE 537 CONSECUTIVE HYSTERECTOMIES*

Pathologic Conditions at Operation	*Age*	*Weight, Pounds*	*Blood Pressure*	*Cause of Death*
Case 1 (1932): Fibroid uterus, size of 4 mo. pregnancy; no adhesions; adnexa normal	42	115	110/70	Necrosis of cerebral cortex (anoxemia under anesthetic); autopsy
Case 2 (1933): Fibroid uterus, size of 6 mo. pregnancy, dense adhesions; adnexal inflammation	56	195	208/110	Chronic plus acute nephritis; peritonitis (Staphylococcus); autopsy
Case 3 (1933): Adenocarcinoma of fundus uteri; extensive adhesions; panhysterectomy done	64	115	210/130	Pulmonary embolism; autopsy
Case 4 (1933): Multiple small fibroids; small corpus luteum cyst of one ovary	32	132	122/60	Acute peritonitis (Streptococcus); autopsy
Case 5 (1934): Small fibroid; dense adhesions; gangrenous endometrial cyst	74	130	195/115	Uremia (anuria); no autopsy

* From May 1934 to September 1938, 317 consecutive hysterectomies were done, without a death.

Pulmonary complications following hysterectomy occur much less frequently than formerly. Twenty-five years ago, pneumonia was frequently reported as a postoperative complication. The deep and prolonged ether anesthesia of those days probably accounted for this. Furthermore, many of the so-called pneumonias were doubtless instances of pulmonary collapse—a condition not then understood. In this series of hysterectomies there was no postoperative pneumonia. Five patients had pleurisy, the diagnosis being based on the friction rub and on the fact that there was no blood-streaked sputum or other indication of infarcts. There were also 5 patients with partial pulmonary collapse, all of whom recovered.

Postoperative shock is rarely seen. None of the 537 patients showed any indication of it, despite the fact that it would have followed as a logical sequence in a number of cases had ether been used as an anesthetic.

That improved anesthesia has lessened the occurrence of many postoperative complications there can be no doubt. I have not used spinal anesthesia for a number of years. For seven years avertin was used as a basal anesthetic with nitrous oxide. Small amounts of ether were added if further relaxation was required. For the past two and a half years, nitrous oxide has been practically abandoned, and cyclopropane has taken its place. This change to cyclopropane has given the greatest satisfaction. Postoperative discomfort and vomiting have been greatly decreased, and the patients have no unpleasant memories of going to the operating room or of their anesthetic. For the surgeon, too, the quiet breathing and complete muscular relaxation make abdominal surgery much simpler.

The writer is a firm believer in the value of the transverse incision for all pelvic surgery. Excluding the 2 vaginal hysterectomies, there were 535 abdominal incisions. In only 49 of these was the incision made in the median line. Of the 535 patients, 86 had had a previous median incision. Thirty of these were reopened through the old scar chiefly because of a broad and unsightly scar. In the remaining 56 cases of median scar, the usual transverse incision was bladder led Elman and Graham[7] to conclude that the gallbladder has the power to excrete cholesterol and that inflammation may accelerate this excretion; that infection, rather than stasis, is the primary factor in the pathogenesis of the strawberry gallbladder, and that cholesterol in the process of excretion becomes stored under the mucosa when the limit of absorption of bile has been reached. Their conclusions contradict the older theory that the gallbladder normally absorbs cholesterol. Illingworth[15] observed that the cholesterol in the bile does not stand in constant relationship to the cholesterol of the blood.

When attention was shifted from the stones to the inflammatory changes in the walls of the organ containing them and, consequently, to infection, analogy with the vermiform appendix was unescapable. Removal of this blind sac with dispensable function, readily harboring infection that tended to produce serious consequences, was to many surgeons the logical procedure. "Take it out and be through with it!" was, however, a response less convincing to the comparative anatomist and to the physiologist, who saw in the gallbladder, not a vestigial or retrograde organ like the appendix, but one the function of which is susceptible to influence by hygienic, dietetic, medicinal and mechanical measures. DuBose[8] noted the astonishingly large number of gallbladders removed chiefly because of the analogy with the appendix, and the consequent high mortality. The failure of cholecystectomy reported in an appreciable percentage of cases indicates that removal of the gallbladder by no means insures that the patient is entirely "through with it."

In consequence, consideration has been drawn to the relative importance of other parts of the biliary tract, especially the liver, in disease of the gallbladder, and the gallbladder is coming to be regarded as only one of the organs responsible for the symptoms of this disease, perhaps not even the one primarily affected. From his experimental work Brown[3] concluded that cholecystitis does not exist unless inflammatory lesions are present in the liver. This view tends to confirm the presence of a preexisting hepatic infection that spreads to the wall of the gallbladder through the lymphatic vessels, and would explain the frequency of cholecystitis as a sequel to or associated with remote inflammatory lesions of the portal system, such as appendicitis, typhoid and peptic ulcer.

Morbid changes in the liver may exist when the gallbladder is not grossly diseased. Judd[17a] in a number of cases observed striking changes in the liver with little sign of disease in the gallbladder when he operated expecting to find definite evidence of cholecystitis. Referring to that chapter in surgery of the gallbladder devoted to removal of the cause, Royster[24] stated: "Such observations lead us to wonder if, after all, the liver may not furnish the scene for our third chapter. Just whether the hepatic pathology should be regarded as the prologue or the final act of the drama is the problem." With increasing frequency the thought is expressed that the further progress of this branch of surgery is bound up with the secrets of the physiology of the liver.

As yet there is little substantial knowledge about this organ, both immediately before and subsequent to surgical intervention. As Heyd[14] observed, the multiplicity of its functions and the inadequacy of any test to reveal the degree of their activity render the preoperative appraisal of hepatic function difficult; also, a condition of liver insufficiency, described by numerous continental observers, eludes definite determination in terms of any specific form of hepatic deficiency as measured by standards available at the present time. Nevertheless, the liver is always involved, whether disease of the biliary tract terminates in da[illegible] o[illegible]or-

This is the case of the patient with a retroverted uterus and a small fibroid who died of peritonitis (case 4).

COMMENT

It is obvious that the mortality rate for vaginal hysterectomy is and should be lower than that for abdominal hysterectomy. It is also obvious that gross pathologic conditions can be removed more safely and certainly more easily through the abdominal approach. In other words, all cases, with or without serious pathologic changes, can be taken care of through the abdominal route, while through the vaginal route the surgeon must choose his cases with keen appreciation for the necessary factors in order to avoid accidents and to insure safe recovery of the patient.

SUMMARY

A series of 537 hysterectomies done by the author during an eight year period are reported. The small proportion of 16 total hysterectomies is accounted for by the author's belief that the cervix can be treated pre- or postoperatively when disease other than carcinoma exists. Experience thirty years ago in the vaginal approach to pelvic conditions and the results now obtained by the abdominal approach do not justify returning to the vaginal approach. In this series there were 535 abdominal hysterectomies. The author uses the transverse incision for all pelvic operations.

Of the 537 operations, 448 were done for fibroids.

The author believes that obstetric thrombosis and thrombosis following pelvic operations are due to infection. Infection beneath the peritoneal flaps covering the cervix occurred in 8 patients. There were no cases of postoperative pneumonia, 5 cases of pleurisy and 5 of partial pulmonary collapse.

The mortality in the entire 537 cases was 5 deaths (0.93 per cent). The last death occurred in May 1934, since which time there have been 317 hysterectomies without a death.

RÉSUMÉ

L'Analyse de 537 Hystérectomies

L'auteur rapporte une série de 537 hystérectomies pratiquées durant une période de huit ans. Il n' eut que 16 hystérectomies totales, car l'auteur croit que le col. peut être traité avant ou après l'acte opératoire dans les cas non carcinomateux. Il préfère la voie abdominale. Il l'employa dans 535 cas. Dans les operations pelviennes l'auteur a recours a l'incision transversale. Dans 448 cas les malades furent opérées pour myofibromes utérins. D'après l'auteur, les thromboses d'origine obstétrique ou opératoire sont dues à l'infection. Il y eut cinq cas de pleurésie, trois d'affaisement partiel pulmonaire, aucun cas de pneumonie post-opératoire. Il y eut cinq décès dans la série. Dans les derniers 317 cas il n'y eut aucun décès.

ZUSAMMENFASSUNG

Ergebnis von 537 Hysterektomien

Der Autor berichtet über 537 Hysterektomien, die er während 8 Jahren vorgenommen hat. Dass davon nur ein kleiner Prozentsatz von 16 Operationen Totalexstirpationen der Gebärmutter waren, ist darauf zurückzuführen, dass der Autor glaubt, dass die Cervix prä- oder postoperativ behandelt werden kann, wenn andere Erkrankungen als Carcinom vorliegen. Der Vergleich der Erfahrungen, die man 30 Jahre zurück in der vaginalen Operation pathologischer Beckenbedingungen gesammelt hatte, mit den Ergebnissen, die man heut bei abdominalem Vorgehen erzielt, rechtfertigt die Rückkehr zur vaginalen Methode nicht. In dieser Serie sind 535 Fälle abdominal angegangen worden. Der Autor benützt den Querschnitt für alle Beckenoperationen. 448 Operationen von den be-

earlier cholecystectomy is to stop the *progress of cholecystitis before the* stone-forming stage is reached, diagnostic art must accept the challenge to show continued improvement.

Since it appears, then, that the patient with a diseased gallbladder has an excellent chance of a satisfactory symptomatic result if this organ is removed, the problem resolves itself into one of accurate diagnosis. Numerous observers[29] have concluded that symptoms are much more to be relied on than either cholecystographic evidence or the pathologic report. Biliary colic, it is generally agreed, is the indication par excellence for cholecystectomy as well as the preoperative symptom most likely to be relieved by this procedure. Just as the highest percentage of cures occurs in patients having typical biliary colic without dyspepsia, so the lowest occurs in those having dyspepsia but no colic.[20] Halberg[13] observed that the percentage of relief is likewise low in cases in which neurosis, nervous exhaustion or migraine is present. In reviewing the dilemma of unrelieved symptoms, Cabot[4] strongly protested against the practice of operating to relieve abdominal pain first and sending the patient for neurologic examination afterward.

The relatively high percentage of cures in the group of patients with normal or nearly normal gallbladders discourages the surgeon from placing too much prognostic value on the pathologic report. The histologic changes in the wall of the gallbladder do not always afford an accurate index of the symptoms the organ has produced or of the benefits that may result from cholecystectomy, for in many cases there appears to be a condition of abnormal mechanism or disturbed function without anatomic change.[20]

In a large number of cases the cholecystogram is a reliable aid in diagnosis. Kunath[20] found cholecystography accurate in well over 90 per cent of the 200 cases in the series recently reported by him. Meranze, Salzmann and Meranze[23] made correct diagnoses from cholecystographic studies in 82.7 per cent of their series of 58 cases. Cholecystography has a twofold object: (1) to reveal the presence of stones and of new growths and (2) to suggest interference with the function of the gallbladder. In interpreting the cholecystogram, it is to be remembered that it is not the gallbladder but the dye-impregnated bile it contains that is being photographed. Despite numerous sources of error, both technical and interpretative, cholecystography has made the diagnosis of chronic cholecystitis much more common and has brought about a gradual acceptance of a broader symptomatology in disease of the gallbladder.

The trend of opinion seems to favor waiting until an attack of cholecystitis has subsided before operating. Wilson, Lehman and Goodwin[28] concluded that the desirability of early operation in acute cholecystitis is not proved when measured by mortality rates. On the other hand, Meranze and his associates[23] observed that the results of cholecystectomy on the 22 patients presenting acute gangrenous, acute ulcerative or an acute exacerbation of chronic cholecystitis in their series of 133 patients indicated that a radical operation as soon as the patient has been adequately prepared is the desirable mode of treatment.

Jaundice presents numerous problems. Determination of the type of jaundice is one major problem, since only in the obstructive type can surgical intervention on the gallbladder and ducts be expected to give satisfactory results. Certainly jaundiced patients should have the benefit of every known procedure to counteract damage to the liver and improve coagulation of the blood.[2]

Although by no means settled the controversy over the re [illegible]

PRESENT STATUS OF SURGERY OF THE GALL BLADDER*

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THE high degree of attainment in surgical procedure and technic has in recent years brought about a shifting of emphasis throughout the field of surgery. Particularly is this change evident in surgery of the gallbladder. At first, attention was naturally centered on removing the stone or stones, the most prominent feature, and conserving the organ. When experience revealed that removal of the stones failed in a large number of cases to terminate the disease and that the loss even of a normal gallbladder was borne without gross disturbance, interest was shifted from the stones to the gallbladder itself. As in other branches of surgery, emphasis now rests on causation and the avoidance of operation. As Royster[24] prophesied, the third chapter in the treatment of disease of the gallbladder will doubtless record the removal of the cause. It is estimated that approximately 40 per cent of the adult population have disorders of the biliary system, which in probably the majority of instances are at times associated with more or less severe symptoms.[23]

The gallbladder is a blind sac, connected by a duct with a second duct which brings the bile from the liver. By an ingenious arrangement of spiral valves and a partial sphincter, the same passage along which the bile flows into the gallbladder serves for its return, and it then flows on into the duodenum by the same route it would have taken had it not been diverted. The purpose of the excursion of the bile into this blind sac and its sojourn there is not definitely determined. At first, the gallbladder was regarded as a reservoir. Later, attention was turned to the absorption of fluid by its walls with the resulting concentration of the contained bile, a function to which the villous formation of the mucosa with its abundant supply of blood and lymph pointed.

The evacuatory action of the gallbladder seems to be under the control of a complex mechanism, depending on factors outside itself as well as on the much disputed contraction of its walls. A hormone contained in intestinal extracts, which caused contraction of the walls of the gallbladder in animals, was proposed by Ivy and Oldberg[16] in explanation of the contraction and evacuation of this organ.

Mann[22] suggested that the gallbladder acts to correlate the secretory activities of the liver with those of the gastrointestinal tract. He concluded that the acid secretion of the stomach, coming in contact with the papilla of Vater and relaxing the sphincter of Oddi, releases the bile into the intestinal tract, whence the bile salts are absorbed into the blood and, on reaching the liver, so stimulate the secretion of bile that the gallbladder is promptly refilled. With the gallbadder removed, the sphincter no longer closes completely, and the bile dribbles constantly into the intestine, thus causing this intimate secretory response to cease.

The rôle of the gallbladder in cholesterol metabolism is not established. Their study of the strawberry gall-due to incidental appendectomy, the psychotherapeutic effect of a laparotomy or to other causes not directly attributable to the gallbladder. Removal of the gallbladder is by no means to be regarded as a cure-all for disease of the biliary tract or for more remote lesions, and removal of a normal gallbladder owing to a general notion that it is as well out as in is certainly unjustifiable.

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The inevitable sequel to the loss of the gallbladder is dilatation of the common duct and the hepatic duct and all their pedicles. Thus a disturbance of the entire biliary circulation ensues. Gibbon[11] asserted that the surgeon is justified in bringing about these changes only if the gallbladder is definitely diseased. The physiologic disturbances following the removal of a functioning gallbladder are undoubtedly greater than those taking place gradually when the biliary system, particularly the liver, loses the function of the gallbladder little by little through disease. Once a sound knowledge of the common morbid physiologic changes occurring in the biliary tract is mastered, improvement in the treatment of the stoneless gallbladder may take the form of more intelligent medical management.

A fourth chapter in surgery of the gallbladder may well be directed toward training young surgeons to recognize the strategic position of the gallbladder in the complicated biliary syndrome. Adequate exposure of the field of operation in surgical treatment of the gallbladder, so that the important anatomic landmarks are constantly visible, should be emphasized also, for it avoids injury to the ducts and lessens postoperative sequelae. However, before the third chapter, revealing the cause and how it may best be removed, is completed, more knowledge of the precipitating factors of disease of the gallbladder, both with and without stones, and better understanding of disordered states of the liver, of the relation of the gallbladder to neighboring structures and of cholesterol metabolism must be acquired.

SUMMARY

Emphasis in surgery of the gallbladder has been shifting from removal of the stones to removal of the gallbladder itself. Present emphasis rests on causation and the avoidance of operation.

The gallbladder has often been removed because of inflammatory changes, and its analogy to the vermiform appendix has been pointed out. It may be a focus of infection for the entire biliary tract.

In diagnosis, clinical symptoms are more to be relied on than cholecystographic or histologic evidence.

In regard to jaundice, only the obstructive type responds satisfactorily to operation on the gallbladder and ducts.

Cholecystectomy is the operation of choice in most cases. The end-results are best in cases of strawberry gallbladder with stones and those of gallbladder with evidence of severe calculous cholecystitis. Among substitute procedures for cholecystectomy is Thorek's electrosurgical obliteration of the gallbladder.

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gan, or is preceded by such damage, as Graham[12a] and others believe. Boyce, Veal and McFetridge[1] concluded that the surgeon who operates on the gallbladder operates vicariously, as it were, on the liver, frequently with consequences out of all proportion to the apparent ease of the surgical act, for the liver, despite its enormous regenerative powers, cannot endure such insults as are often initiated by the original disease and carried beyond the point of tolerance by the operation to relieve it.

Because of its close anatomic relationship with the gallbladder the pancreas is to be considered in disease of that organ. In more than half of the cases of cyst of the pancreas and in the majority of the cases of hemorrhagic pancreatitis that came under their observation Judd, McIndoe and Marshall[18] found a stone or stones in the gallbladder. It is well recognized that the removal of an associated calculous gallbladder has a beneficial effect on diabetes.

Whether chronic cholecystitis, with or without stones, and the strawberry gallbladder are to be regarded as local disorders or as conditions related to a more general disorder is one of the chief problems of present-day surgery of the gallbladder. While the late results of surgical treatment in these cases, taken as a whole in large groups, is gratifying, the prognosis in the individual case is uncertain. Despite seemingly favorable indications, there are failures; also, brilliant successes occur in the face of a lack of demonstrable pathologic changes in the removed gallbladder.

SURGICAL TREATMENT

Analysis of the ultimate results of surgical treatment of the gallbladder has led to the consensus that the strawberry gallbladder with stones and the gallbladder giving evidence of severe calculous cholecystitis are the types most successfully treated by cholecystectomy. This radical form of treatment has been increasingly less successful in other types in the order named: the gallbladder showing severe cholecystitis without stones, the strawberry gallbladder without stones and the gallbladder in which mild cholecystitis is present. In a study of 300 cases investigated more than five years after operation, Synhorst[26] reported good results in 87.8 per cent of cases of strawberry gallbladder with stones and 67.4 per cent without stones, in 81.2 per cent of cases of severe cholecystitis with stones and 70 per cent without stones. The percentages of favorable late results reported by Judd and his associates[18] were: 96 for strawberry gallbladder with stones, 93 for severe cholecystitis with stones, 88 for noncalculous cholecystitis and 87 for strawberry gallbladder without stones. They noted that the diagnosis was not definite in most of the cases of mild cholecystitis in which cholecystectomy failed. Summarizing the reports of the late results of cholecystectomy in 2,222 traced patients represented in 13 series reported in the literature, Sanders[25] noted that 1,699 (76.4 per cent) were classified as well, 321 (14.5 per cent) as improved, and 145 (6.5 per cent) as unimproved. After reviewing 6,000 cases reported in the literature, Mackey[21] concluded that cure or improvement after cholecystectomy may be expected in nearly 90 per cent of cases of cholelithiasis and in approximately 80 per cent of those of cholecystitis without stones. In general, then, as Kunath[20] observed, the percentage of good results rises steadily as the pathologic processes in the gallbladder become more advanced. It has been my experience that the extent of the disease of the gallbladder bears a definite relation to the ultimate result after cholecystectomy and that relief is most striking after removal of the strawberry gallbladder with stones. If in the future

Operation in der Mehrzahl der Fälle. Die Endresultate sind die besten in Fällen von "Erdbeer"-Gallenblase mit Steinen und in Fällen von schwerer Gallenblasenentzundung mit Steinen. Unter den Operationen, die die Cholecystektomie ersetzen, ist Thoreks elektrochirurgische Verödung der Gallenblase zu erwähnen.

SUMARIO

Estado presente de la cirugía de la vesícula biliar

Enfasis en cirugía de la vesícula biliar ha sido cambiada de la extración de las piedras á la extirpación de la vesícula biliar en sí. El énfasis presente considera las causas y la posibilidad de evitar operaciones. La vesícula biliar ha sido á menudo extirpada debido á cambios inflamatorios, y su analogía á la apendice vermiforme ha sido considerada. Ella puede ser un foco de infección para todo el tracto biliar. En el diagnóstico, los síntomas clínicos tienen que considerar más la colecisto grafía ó evidencias histológicas. Con respecto á ictericia, solamente el tipo obstructivo responde satisfactoriamente á la operación en la vesícula biliar y conductos.

Colecistectomía es la operación á escojer en la majoría de los casos. Los resultados finales son los mejores cuando la vesícula biliar es á tipo de fresa con piedras y en casos con evidencia de colecistitis calculosa severa. Entre los procedimientos á sustituir la cholecistectomía está la obliteración electroquirúrgica de la vesícula biliar del Dr. Thorek.

RIASSUNTO

Chirurgia della cistifellea

Nella chirurgia della cistifellea si è spostata dalla rimozione dei calcoli alla colecistectomia. Al presente l'emfasi è sulle cause etiologiche e le possibili probabilità di evitare l'intervento. La cistifellea è spesso rimossa per processi infiammatorii analoghi, a quelli dell'appendici vermiforme. In tali casi può essere un focolaio di infezione per l'intero tratto biliare. Nella diagnosi, la sintomatologia clinica dove essere tenuta in maggiore considerazione dei reperti colecistografici. In riguardo dell'ittero soltanto il tipo ostruttivo risponde bene ad interventi sulla cistifellea e dotti.

La colecistectomia è l'operazione più indicata. I megliori risultati si ottengono nei casi di colesterosi (cistifellea a fragola) e nei casi di colecistite calcolosa. Tre i procedimenti di sostituzione della colecistectomia è degno di menzione il metodo Thorek di obliterazione elettrochirurgica.

cholecystectomy and cholecystostomy seems to have abated with the assigning of a definite field to each procedure. Experience is clearing away the chief objections to the more radical operation, high mortality in particular, and points to cholecystectomy as the operation of choice in most instances.[5]

It is being recognized more and more that it is best to close the abdomen at once after cholecystectomy, provided drainage is not necessary. Judd[17a] stated: "In doing cholecystectomy for chronic cholecystic disease we frequently close the wound without drainage. We feel that this is a perfectly safe procedure if the cystic duct and cystic artery have been accurately ligated, if the gallbladder fossa has been carefully sutured, and if the operative field is dry." Sanders[25] summarized the literature pertaining to postoperative drainage. Fowler[9] concluded that in spite of the temptation not to drain, it is wiser to do so, and Thorek[27a] observed that the best drainage of the biliary system is that which follows continuously after cholecystectomy through the common duct into the duodenum.

The operation for anastomosis of the gallbladder, or common duct to the stomach or duodenum, has been brought to a high degree of technical perfection. Its value is strictly limited, however, because ascending infection is practically certain to follow, and it should, therefore, be performed only when there is an obstruction of the common duct that cannot be overcome. Even then, the surgeon should first assure himself of the permeability of the cystic duct.

Estes,[8] Gatch[10] and others[29] described modifications of cholecystectomy that may conceivably have a place in surgery of the gallbladder. Recently, Thorek[27] described electrosurgical obliteration of the gallbladder as a procedure so suitable for both simple and complicated cases of disease of this organ that it reduces mortality to a minimum.

Although surgeons now agree that an infected gallbladder is incapable of being restored to normal function and may also act as a focus of infection,[12] nevertheless the benefit to the patient from its removal is in the individual case always problematic. Not only the changed content and the involvement of the walls of the diseased gallbladder, but also the associated involvement, for which it may be partly responsible, of the pericholecystic structures, determine the degree of disability the patient may suffer from it. Since the infected wall of the gallbladder does not tend toward spontaneous cure as do the neighboring structures, it may become the keystone of the arch that maintains the disease, whether originally the site of the initial infection or at any given time the site of the greatest involvement. It seems reasonable to assume, therefore, that the removal of the gallbladder under such conditions could have the happiest results for the patient. Judd and Priestly[19] observed that emphasis on the gallbladder as a focus of infection has led not infrequently to cholecystectomy for the sole purpose of influencing favorably the healing of lesions elsewhere in the body.

Good results are sometimes obtained by the removal of a gallbladder that appears normal at operation. Such a situation calls for fine surgical judgment that is not to be based alone on a momentary glimpse within the abdomen but on a thorough preliminary investigation as well, with properly correlated clinical and cholecystographic evidence serving as the determining factor in ascribing symptoms to the gallbladder. Judd[17b] concluded that a normal gallbladder should be removed if primary hepatitis or pancreatitis is proved. In the series of cases studied by Kunath[20] 24 per cent of the patients with gallbladders normal histologically reported themselves cured by cholecystectomy. He concluded the relief of symptoms in these cases may have been

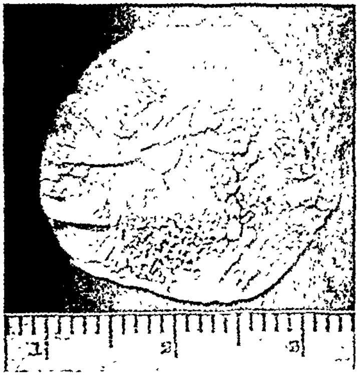

Fig 3 Specimen showing portion of tongue removed

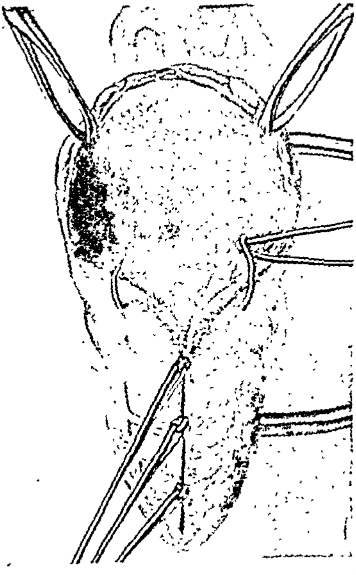

Fig 4 The dorsum of the tongue is removed inch by inch, deep sutures being placed as the removal proceeds

little, for if the slice is too thin it tears away, and a reasonably thick slice aids in the subsequent plastic repair. The process of slicing is conducted in stages. About 1 inch (2.54 cm.) is first severed.

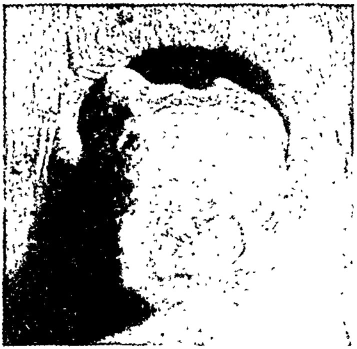

Fig 5 Appearance two years after removal of the dorsum of the tongue The specimen removed in this case is shown in figure 3

Bleeding is copious, but this is controlled by deep stitches of no. 3 catgut introduced in such a way as to approximate the lateral cut edges in the middle line. Inch by inch this process is repeated (fig. 4) until one reaches the back of the tongue. Taking a smaller scalpel, one cuts a V corresponding to the circumvallated papillae. The process of removing the slice is continued until the V-shaped incision is reached. It is usually possible to almost cover the denuded back of the tongue by approximating the mucous membrane at the sides with that of the extreme base.

Being assured that there is no bleeding, especially at the back, one cuts short the posterior sutures, but a few anterior ones remain in order that the tongue may be drawn forward while the patient is coming round from the anesthetic.

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RÉSUMÉ

La Chirurgie de la Vésicule Biliare

Premièrement on a enlevé les calculs biliares, puis on a eu recours a l'enlèvement de la vésicule biliare. De nos jours, on se préoccupe beaucoup plus des causes déterminantes et d'éviter les mesures operatoires.

On a enlevé la vésicule biliare pour changements inflammatoires. On a signalé son analogie avec l'appendice vermiforme. La vésicule biliare peut être un foyer d'infection pour tout l'appareil biliare. Les symptômes cliniques doivent prévaloir sur les témoignages radiographiques et histologiques. Dans l'ictère obstructif, l'intervention sur la vésicule biliare et les conduits donne de bons résultats.

La cholecystectomie est l'opération de choix. On peut substituer à la cholecystectomie l'obliteration electrochirurgicale de la vésicule biliare par la méthode de Thorek.

ZUSAMMENFASSUNG

Chirurgie der Gallenblase

Das Ziel der Gallenblasenchirurgie hat sich verschoben von der Entfernung der Gallensteine zur Entfernung der Gallenblase selbst. Augenblicklich ist das Interesse auf die zugrundeliegenden Ursachen und die Vermeidung von Eingriffen gerichtet.

Die Gallenblase ist oft der entzündlichen Veränderungen wegen entfernt werden und es ist auf ihre Analogie mit dem Blinddarm hingewiesen. Sie kann einen Entzündungsherd für das gesamte Gallengangssystem darstellen. Bei Stellung der Diagnose kann man sich mehr auf die klinischen Symptome als auf die cholecystographischen oder histologischen Befunde varlassen. Was Gelbsucht anbetrifft, so spricht nur der obstruktive Typ befriedigend auf Gallengang und -Blasenoperation an.

Cholecystektomie ist die gegebene

EXTRAPLEURAL THORACOPLASTY

FURTHER EXPERIENCES WITH A MUSCLE-SPLITTING OPERATION*

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AT the beginning of the twentieth century the collapse therapy of pulmonary tuberculosis was tottering on unsteady legs — a feeble orphan of no appreciable expectancy. Murphy had abandoned the use of artificial pneumothorax, Lemke had died, and Forlanini had published nothing since 1894. The few thoracoplasties which had been performed by Quincke, Spengler, Landerer and others had consisted in the removal of lateral segments of ribs directly over cavities and had accomplished little.

It is probable that the principle would have survived and developed in spite of its inauspicious start, but that it took on new life when it did and developed so rapidly to its present stature is due chiefly to the insight, the enthusiasm and the energy of Ludwig Brauer. Brauer, an internist and phthisiologist, read Murphy's 1898 article and started to use artificial pneumothorax and to consider thoracoplasty. Within the next few years there began to issue from his clinic a steady flow of clinical and experimental studies on the effects of artificial pneumothorax which succeeded in demonstrating its value and establishing its use. It was only in 1907 after Brauer had begun to popularize it that Forlanini again wrote on the subject, and one of the anomalies of medical history is the fact that this procedure which had been conceived and used in this country in 1898 had to be reimported from Germany as late as 1912. It is striking testimony to the importance of the rôle of the developer and popularizer. Having convinced himself of the value of effective collapse of the lung by artificial pneumothorax and having been repeatedly exasperated by the hindrance of adhesions, Brauer turned his attention to thoracoplasty. The principles and technic which he laid down for this procedure have governed its development over the past thirty years and, curiously enough, have only recently been adequately applied. In 1908 he stated: "If thoracoplasty is ever to be successful it must produce a collapse of the lung as complete as that afforded by a successful pneumothorax." Working on this principle he had induced Friedreich to operate for him and through a large periscapular incision to remove almost the full lengths of the upper eight ribs. The first eight patients operated upon survived and were either cured or markedly improved. After that the mortality mounted, and it soon became evident that shock, mediastinal flutter, retention of sputum and wound infection made the operation exceedingly dangerous.

A movement for the appeasement of its severity immediately commenced. Work in this direction was headed by Wilms and by Ferdinand Sauerbruch. The latter had been Friedreich's assistant at the time of his original operations. Wilms discovered an older work on chronic empyema by Geordet, who had shown that the hemothorax could be markedly reduced in size by resection of small segments or ribs close to the spine. Wilms accomplished this by making a vertical paravertebral incision through the skin and fat and then splitting the muscles of the shoulder girdle

EXCISION OF THE TOTAL LEUKOPLAKIC AREA OF THE TONGUE

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LEUKOPLAKIA glossitis, when fully established (fig. 1), is a depressing condition. Careful conservative measures combined, in necessary cases, with antisyphilitic treatment, effect little or nothing in the way of improvement. All that can be hoped for is the prevention of further inroads of the pathologic process. In spite of watchful care, carcinoma sometimes develops in one of the diseased areas, and every clinician knows how difficult it is to persuade some of these patients to attend clinics regularly. Faced with such doleful potentialities the surgeon welcomes a method which will eradicate this progressive disease.

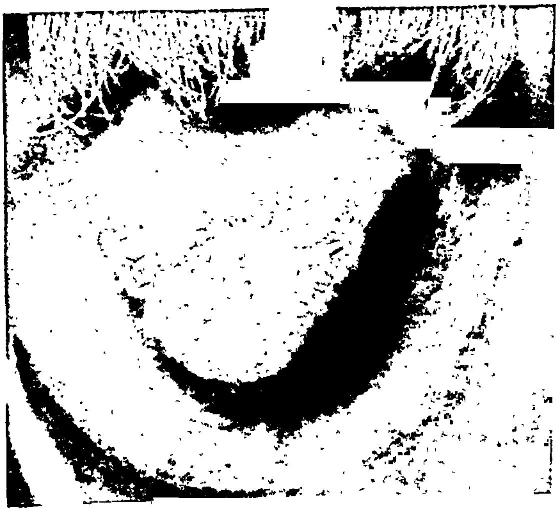

Fig. 1. Leukoplakia glossitis.

I have been well pleased with the end-results of excision of the whole dorsum of the tongue by the following method.

TECHNIC OF OPERATION

Intratracheal anesthesia is employed, and the pharynx is packed. The jaws are gagged and the tongue drawn out. Into the under surface of the tongue toward the tip are placed two silkworm gut stitches; these stay sutures are used to draw the tongue out still farther and to stretch it somewhat transversely. With an ordinary scalpel an incision about ¼ inch (0.64 cm.) deep is made around the edge of the tongue (fig. 2). *This is an important step, for by this* incision the diseased areas at the side of the tongue are marked out in order that they may be subsequently removed with the dorsum. Poirier's forceps is made to grasp the superficial edges of the cut, and in this way the whole area to be removed is mapped out.

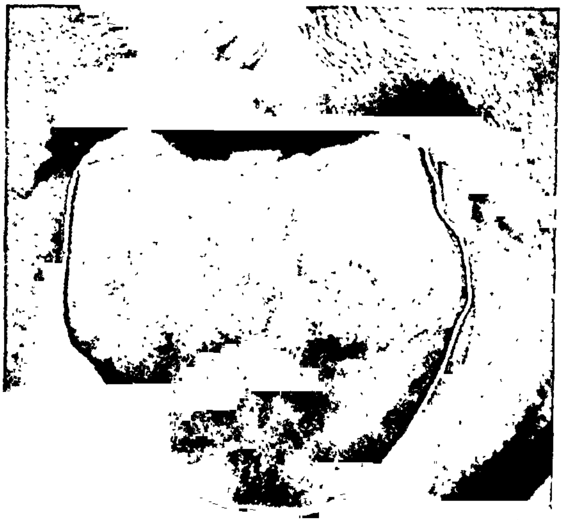

Fig. 2. An incision is made around the edges of the tongue, mapping out the diseased area.

Taking a very sharp Syme's knife, or skin-grafting razor, one commences the process of removing a slice which includes the whole of the diseased area. The piece removed should be about ¼ inch in thickness (fig. 3). It is better to take away a little too much than too

1928, and which so delays the regeneration of bone that longer intervals may be permitted between operations. In 1928 also I described a muscle-splitting approach to the posterior portions of the ribs. I have recently readapted this operation in the hope that by means of it one could produce a satisfactory collapse with a minimum of risk. The small incisions reduce both shock and the incidence of wound infections. The gradual collapse of the chest wall minimizes paradoxical respiration, permits the heart and respiration to adjust gradually to the new conditions and also preserves the effectiveness of cough.

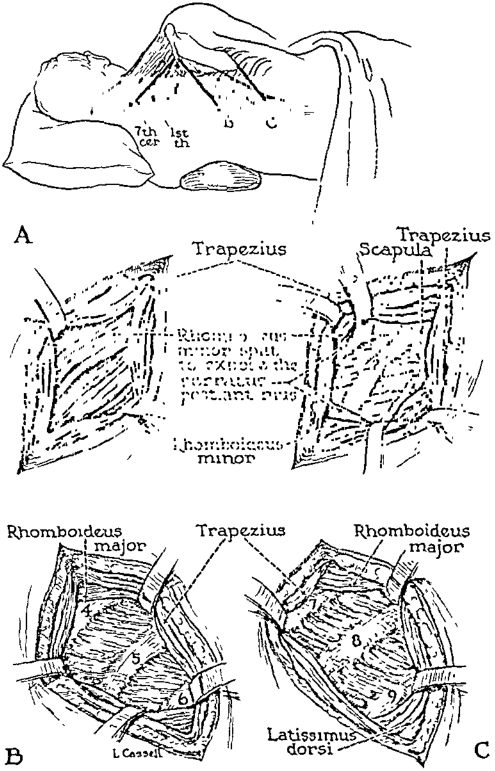

Fig 1 Drawing illustrating operation

TECHNIC

This operation is performed through separate incisions. It is not necessary to reopen any incision—a f[illegible] which

COMMENT

There is very little pain in the after-stages, and a surprisingly mobile, rather narrow, elongated tongue results (fig. 5). In a few weeks the patient speaks clearly and, what is remarkable, all these patients appreciate taste. I have been at a loss to explain this, as the taste buds are removed.

SUMMARY

A technic for total excision of the dorsum of the tongue in patients with leukoplakia glossitis is described, in which an incision is made marking out the diseased area and removal is done in stages. Speech and taste are unimpaired.

RÉSUMÉ

Excision totale des plaques leucoplasiques de la langue

L'auteur décrit une technique pour l'excision totale de la surface dorsale de la langue dans les cas de glossite leucoplasique. L'ablation des parties malades est faite en plusieurs temps. Le goût et la parole ne sont aucunement lésés.

ZUSAMMENFASSUNG

Radicale Entfernung von Leukoplakien der Zunge

Ein Verfahren zur totalen Entfernung von Leukoplakien des Zungenrückens wird beschrieben; die erkrankte Stelle wird umschnitten und die Entfernung wird Schritt bei Schritt vorgenommen. Sprach- und Tastvermögen werden nicht beeinträchtigt.

SUMARIO

Excisión del area total leucoplácica de la lengua

Una técnica para la excisión total del dorso de la lengua en enfermos con glosítis leucoplásica es descrita, en la cual la incisión es hecha marcando el area enferma y la extirpación es hecha en tiempos. Él habla y el gusto no son perturbados.

RIASSUNTO

Escissione di leucoplasia totale della lingua

Viene discusso un nuovo procedimento operatorio per l'escissione totale della superficie dorsale della lingua, in malati di glossite leucoplasica. L'asportazione delle parti affette viene eseguita in diversi tempi. L'attività mottoria e gustativa della lingua rimane illesa.

are separated, and segments of the second and third ribs and any remaining portion of the first can be reached and removed.

In the third stage, the full lengths of the fourth, fifth and sixth ribs can be removed at a single stage through two small incisions, or the posterior segments at one operation and the anterior segments later. The posterior incision can either be muscle-splitting or can come in a muscular space between the trapezius and the latissimus dorsi, or it can be the usual curved paravertebral incision, which here is not as traumatizing as the upper incision, but it goes only through the latissimus dorsi muscle. Through that the posterior segments of the seventh, eighth and ninth and as many ribs as one is going to take are removed, and the additional anterior segments of the fourth to sixth ribs, which, like the third rib, slant down to come clear to the lower end of the sternum.

COMMENT

The temperature, pulse and respiration curves of patients have shown minimal postoperative reactions.

I use this operation only on older patients, on those who are poor operative risks and on those who have no large cavities.

The test of any thoracoplasty is the collapse which it produces. The exposure does not permit freeing of the chest wall from the attachments of the serratus magnus and scalenes, and for this reason the collapse is occasionally less complete than where these procedures can be carried out. At present, steps are being taken to overcome this defect in the operation.

SUMMARY

The history of collapse therapy is given.

A modification of the operation of extrapleural thoracoplasty is described in which the required lengths of ribs are removed through multiple small muscle-splitting incisions. At the first stage an extrafascial apicolysis can be performed.

The postoperative reaction is minimal; the collapse is produced gradually, and the muscles of the shoulder girdle are not transected. The operation can be used on older persons and those in poor condition with greater safety than the conventional operation, and the incidence of wound infections is less.

RÉSUMÉ

La Thoracoplastie Extrapleurale

Dans la méthode décrite on enlève les longueurs de côtes indiquées par de multiples incisions courtes dans lesquelles on sépare les fibres musculaires sans les couper. Comme premier temps, une apicolyse extrafasciale est effectuée. La reàction post-opératoire est minime, l'affaiblessement s'effectue graduellement, les muscles de la ceinture de l'épaule no sont pas coupés. L'opération est applicable à tout âge; elle offre moins de dangers que les autres méthodes, et l'infection des plaies est moins fréquente.

ZUSAMMENFASSUNG

Extrapleurale Thorakoplastik

Ein Ueberblick über die Geschichte der Kollapsebehandlung ist gegeben. Eine modifizierte Technik der Thorakoplastik wird beschrieben, bei der gewünschte Teil der Rippen durch multiple muskelspaltende schmale Incisionen entfernt wird. Bei dem ersten Stadium kann gleichzeitig eine Lösung der Spitze vorgenommen werden.

Die postoperative Reaktion ist minimal, der Kollaps wird stufenweise hergestellt, und die Muskeln des Schultergürtels werden nicht durchtrennt. Dieses Verfahren kann für ältere Personen und für solche in schlechtem Allgemeinbefinden mit grösserer Sicherheit angewandt werden als die übliche Operation; das Vorkommen von Wundinfektion ist seltener als bei dem sonst gebräuchlichen Verfahren.

at different levels to reach the ribs. He also advocated removing segments of the cartilages anteriorly to permit the lateral segments of the ribs to fold backward more readily. At about the same time Sauerbruch developed a similar operation; a combination of these two became the standard Wilms-Sauerbruch columnar thoracoplasty. Its division into stages, to which Hedblom contributed importantly in this country, marked the final step in this phase of the development of the operation. It is important to bear in mind that the purpose of these changes was to devise a safe operation, but that this was accomplished only by compromising with Brauer's postulate that the collapse be complete.

Brauer, who in the meantime had begun doing his own surgery and was accordingly the first surgeon phthisiologist, continued to use his subscapular operation and to insist that the Wilms-Sauerbruch procedure did not afford sufficient collapse. During the years of the adoption of the operation the desire for safety outweighed the demand for effectiveness, and a bare 40 per cent of cures seemed preferable to a 20 per cent mortality. Until about 1930 the Wilms-Sauerbruch operation was standard. Since then evolution has been in the direction of a more radical operation, a more effective collapse and a higher number of cures. Longer and longer segments of ribs have been resected. Alexander reintroduced Wilms' resection of the cartilages. This was extended to include removal of the full length of the upper ribs and cartilages. The transverse processes came next and, finally, Semb made the important addition of extrafascial apicolysis. To accomplish so radical a revision of the thoracic wall longer and longer incisions were required, and finally the upper stage came to demand an almost complete mobilization of the scapula, with section of the costal attachments of the scalenes and serratus magnus. The operation astonishingly resembled the original Brauer-Friedreich procedure. With this revision of the original technic and principles the old complications reappeared, not in so aggravated a form, because division into stages reduced shock and minimized paradoxical respiration, but they did make their reappearance, and shock, mediastinal flutter, retention of secretions and, most important of all, wound infection again became important considerations and tended to raise the operative mortality and restrict the indications. In spite of this the most important result of the evolution has been the increase in the number of cures, which has risen to approximately 80 per cent of those operated on.

One sees, then, that the two desiderata which have determined the development of the operation and which have been opposed to each other have been an effective collapse and a safe procedure. The ideal is one which combines both—which produces a maximum relaxation of the lung gradually and safely. Only such an operation can be used effectively on patients of all ages and in all stages of debility. The collapse must be effective if the patient is to be cured, but the ideal is to produce it gradually with a minimum of shock, a minimum of paradoxical respiration, a minimum risk of infection and a maximum retention of the power of cough.

I have already said that the division of the operation into stages was an important step in the reduction of the mortality. This increase in safety was accomplished at the sacrifice of a complete collapse, for in the interval between stages the ribs regenerated, frequently to such an extent that the final collapse was seriously compromised. This handicap has been largely overcome by painting the cambium surface of the periosteum with caustics or fixatives, a procedure which I developed in

MUSCULAR GANGRENE OF APPENDICEAL ORIGIN

REPORT OF A CASE

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THIS brief report of muscular gangrene of appendiceal origin is interesting, owing to the infrequency of the condition. I have found no report of an analogous observation in the literature; however, this does not exclude the fact that other publications may have escaped my notice.

REPORT OF CASE

History. A Maltese sailor debarked from his ship and entered my service on Feb. 4, 1939, complaining of pain in the right flank, probably of appendicular origin. It was difficult to obtain a history. Examination revealed tenderness at McBurney's point, slight sensitiveness with ill defined localization. There was no backache. The general condition was good. The temperature was 38.5 C. (101.3 F.), the pulse rate 100. The onset of the symptoms dated from several days previously. The urine showed no albumin, a trace of sugar and the presence of acetone bodies. An ice bag was applied. As the temperature and pulse rate returned rapidly to normal, I decided to postpone operation.

Course. On February 9 a blood count showed 5,370,000 red cells and 11,000 white cells. A differential count revealed 79 per cent neutrophils, no basophils, 1 per cent eosinophils and 20 per cent lymphocytes. We decided to wait, because, as Desmarets has stated, rapid lowering of the leukocyte curve and polynucleosis precede total disappearance of the focus by a considerable interval.

On February 14, about midnight, the patient complained of sudden severe pain in the right flank. He was given a hypodermic injection of morphine and passed a restless night. The pain was progressing. The next morning the condition was serious, with contracture of the abdominal muscles and slight edema of the right scrotum. The temperature was 36.2 (97.2 F.) and the pulse rate 140. Perforation of the appendix was diagnosed, and the patient was sent to the operating room.

Operation and Outcome. Before incision I noted edema of the scrotum and slight subcutaneous contracture and crepitation in the right flank. When the wound was incised there was an odor of gangrene. The color of the muscles was an admixture of a greenish hue with that of gingerbread. There was no pus in the abdominal wall, and a small peritoneal incision showed a normal abdominal cavity. I placed two stitches in the wound, leaving it open, and administered antigangrene serum (100 cc.). A specimen of muscle tissue was sent to the laboratory. The patient died twelve hours later.

Autopsy. Inspection showed areas of gangrene on the right half of the scrotum and a greenish color of the entire right flank. On opening the abdomen the organs were found to be normal. The terminal portion of the small intestine for about 30 cm. was the size of the index finger; there were no adhesions. The cecum was completely adherent to the peritoneal wall. On separation a small retrocecal cavity was disclosed, containing a small amount of grayish pus and some gangrenous tissue. The appendix was not found. The cavity of the cecum was normal, and there was no perforation. Gangrenous infiltration of the muscles was observed. Culture of the muscle specimens showed *Micrococcus foetidus* and *Bacillus ramosus.*

COMMENT

This observation is interesting because of the benign course, interrupted with dramatic suddenness by a violent evolution. Though the appendix was not found at autopsy, it was thought that there was an infection of a retrocecal appendix with diffusion of anaerobic organisms through the intact peritoneum and resulting gangrene.

It was believed that an early operation would not have altered the outcome. The benign course of the appendicular crisis and the differential le kocyte c

I think is important in reducing wound infection.

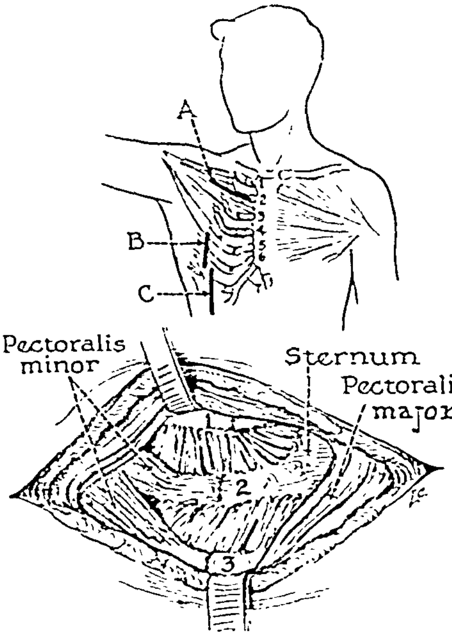

Fig. 2. Anterior incisions, with detail of the infraclavicular incision.

The first incision extends from the junction of the inner and middle thirds of the spine of the scapula upward and backward in the line of the fibers of the trapezius to the first dorsal spine. The fibers of the trapezius are split, and the muscle is dissected up on its under surface to expose the rhomboideus major. This, in turn, is split in the direction of its fibers, with exposure of the posterior segments of the upper three ribs. At this stage practically the whole of the first rib, a large segment of the second and a small segment of the third can be removed. At the same time one performs an extrafascial apicolysis, following the apex of the lung down so that the apex lies on a level with the fourth rib posteriorly. The apicolysis can be extended at the second stage if an exceptionally large cavity is present.

The reason that one can get only a small segment of the third rib is that the ribs slant downward at a relatively sharp angle as they go forward, so that the anterior end of the third rib comes to lie at a level with the angle of the scapula. Thus, unless one induces complete mobilization of the scapula, it is impossible to get a long segment of the third rib at a single operation. At the second stage, however, after one has removed the fourth, fifth and sixth rib, directly in front of one are the anterior segments of the second and third ribs, which can be resected nearly to the sternum through the second incision.

The second stage can be performed a few days later. A small incision is made below the clavicle in the direction of and just over the second rib. The fibers of the pectoralis major

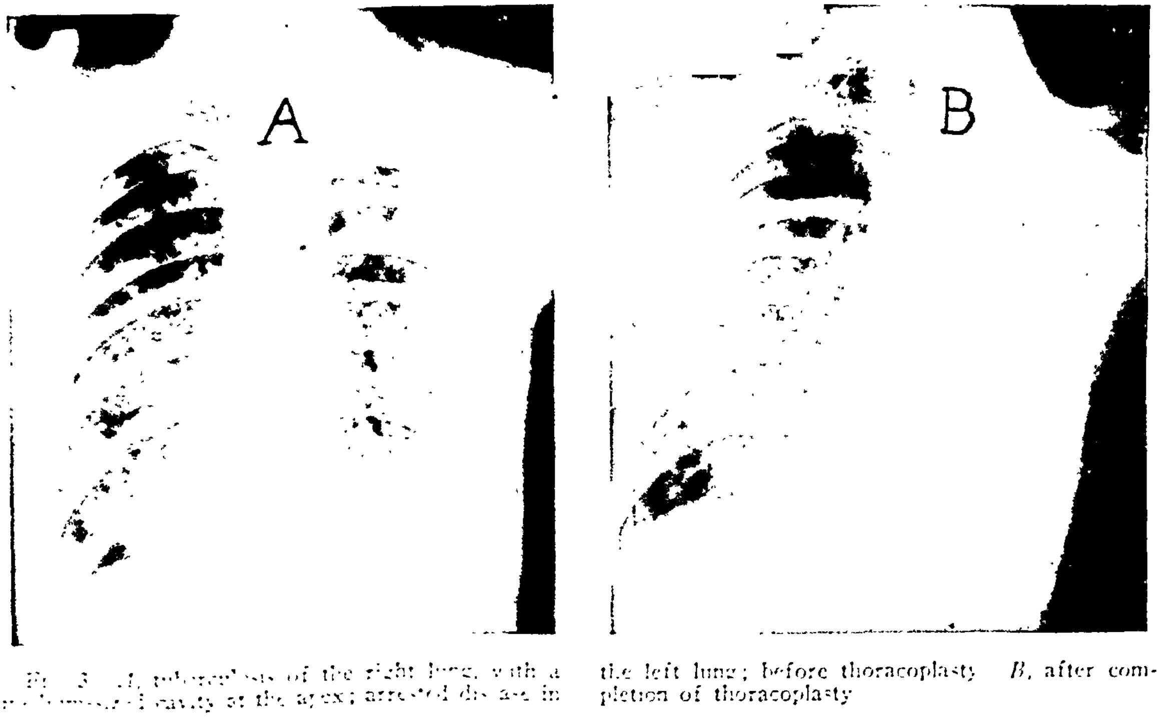

Fig. 3. A, tuberculosis of the right lung, with a [illegible] cavity at the apex; arrested disease in the left lung; before thoracoplasty. B, after completion of thoracoplasty.

MASTOSIS

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Surgeon, Ospedale Maggiore
MILAN, ITALY

RECLUS, in 1833, described a disease which he called cystic disease of the mammae and which he distinguished from the group of diseases of the breast. Some time later the attention of investigators was focused on certain pathologic conditions of the breast which cannot be classified as inflammatory processes and neoplasms and which seem to be related to the physiologic alterations which take place, periodically, in the female breast, on the one hand, and to benign or malignant neoplasms, on the other.

These pathologic conditions of the breast have been described by different names, in accordance with the conceptions of the various authors as to the inflammatory, neoplastic, malformative or, rather, dysplastic nature of the condition, which has been designated as fibrous mastitis, fibrocystic mastitis, diffuse adenoma of the breast, adenocarcinoma and, more recently, cystic fibrosis, cystic fibro-adenomatosis and painful breast.

However, as more cases of the condition have been reported, the most recent studies show a tendency to reunite the aforementioned disorders, which, although apparently distinct, are nothing more than different aspects of the various phases of evolution of the disease, in only a clinical form and a nosographic classification.

The progress of the clinical knowledge and histopathologic studies of the disease made it possible to establish that the various histopathologic aspects of the mastosic mamma correspond to different phases of a pathologic process of a productive and degenerating type which is in evolution and involves the connective and epithelial constituents of the breast, and that the disease should be classified as a dysplastic degeneration.

I have retained the name mastosis for these forms of dysplastic degeneration.[1] I mean to indicate by this term the pathologic conditions of the breast which are characterized from the clinical point of view by painful nodular tumefaction of varying evolution, and from the anatomicopathologic point of view by the development of proliferative degeneration of the various constituents of the breast, with final sclerosis of the connective tissue and formation of dilatation and cysts of the acini and tubules of the mammary gland.

Recognition of this form as a pathologic unity is of great importance not only for the knowledge of this disease, the study and scientific researches of which thus become simplified, but also for the clarification that it brings in the fields of chronic mastitis and preneoplastic disease of the breast.

The etiology of mastosis is now clearer. The attention of investigators was focused for a long time on the endocrine ovarian factor as the cause of Reclus' disease (Rosenberg, Miller, Lazzarini). The researches carried on during the last few years on the correlations between ovarian functions and the breast, especially through the thalamo-encephalohypophysial system, are well known.

The studies done on the mammae of women at different periods of life, in search for cystic formation, have shown the frequency of the condition (Askanazy). Researches more recently done

SUMARIO

Toracoplastia extrapleural

La historia del tratamiento por colapso es revisada. Una modificación de la operación de la toracoplastia extrapleural es descrita en la cual la longitud necesaria de las costillas son extraidas á travez de pequeñas y multiples incisiones por separación muscular. En el primer tiempo una apicolisis extrafascial puede ser hecha.

La reacción post-operativa es mínima; el colapso se produce gradualmente, y los musculos del cinturón del hombro (trapecio, romboideo) no son cortados. La operación puede usarse en personas de edad madúra y aquellos con constitutión muy pobre con un margen mayor de seguridad que en la operación convencional: la incidencia de herídas infectadas es mucho menor.

RIASSUNTO

La toracoplastia extrapleurica

Viene descritta una modificazione della toracoplastia extrapleurica, in cui la remozione delle costo avviene attraverso multiple, piccole incisioni separanti le fibre muscolari senza lederle. Nel primo tempo, una apicolosi extrafasciale viene eseguita.

Le reazione postoperatoria è minima. Il collasso si effettua gradualmente, e i muscoli della cintura scapolare non sono lesi. L'operazione può essere usata negli adulti e nei casi più seri, con un margine di sicurezza maggiore, che nell'operazione convenzionale. L'incidenza di infezioni della ferita è molto minore.

Prof. Raoul Bensaude, gastroenterologist of France, died several months ago.

Prof. Alfred Stengel, clinician at the University of Pennsylvania, died in April.

Prof. Alfred Luger, of Vienna died recently of a brain tumor.

Prof. Victor Pachon, of Bordeaux, has died.

Prof. Andrea Ferrannini, for many years directing editor of *La riforma medica* (Naples), died in February 1939.

Prof. C F. Rasch, Danish dermatologist, died in 1938, aged 77. He held the chair of dermatology in Copenhagen, and was a collector of copper prints and medical medals.

tration of large doses of folliculin in oil, rapidly developed bilateral mastosis, which disappeared on discontinuation of the treatment.

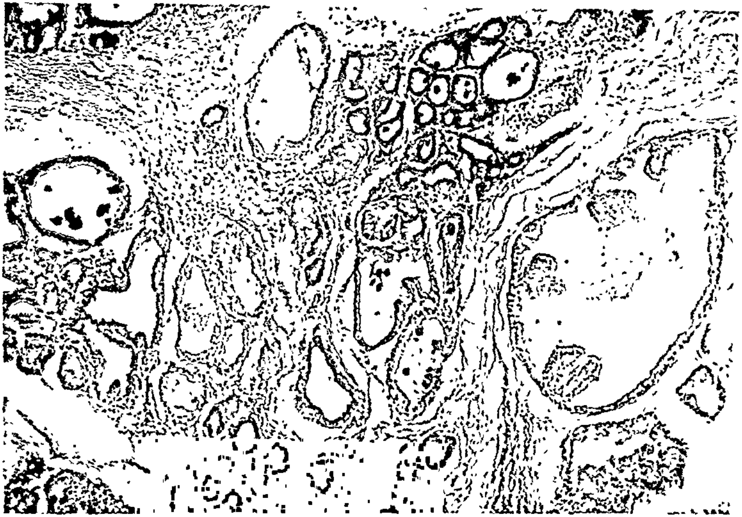

FIG. 2. View of mass of a breast with mastosis. Notable is the complex picture of the lesions, which are not limited to a single type, but are simple, cystic or papillomatous. Near tubules, in the course of epithelial proliferation and in a state of slight dilatation, are seen large cysts covered with pale epithelium or with formations which resemble papillae The pathologic uniqueness of mastosis is demonstrated.

Further observations showed association of ovarian and thyroid dysfunctions in patients suffering from mastosis. The majority of such patients are women of a labile nervous constitution, thin and emotional, who frequently have tremors, accessional tachycardia, free defecation, great differences between the maximal and minimal arterial pressures, with or without enlargement of the thyroid, and, in some cases, increase of the basal metabolic rate. The aforementioned disorders, as well as the mastosic changes, disappear after folliculin-antithyroidin treatment.

The frequency of appearance of mastosis in the postpuberal and preclimacteric periods, when there is a physiologic hyperthyroidism, is another factor that strengthens the pathogenetic theory just stated.

In mastosis the functional alterations of the thyroid are related to simple hyperthyroidism and not to dysfunction of a basedowian type. A true thalamoencephalohypophysial dysfunction does not exist. These statements are proved by the fact that, even if one has in mind the cases of mastosis in patients suffering from exophthalmic goiter, the classic Mesemburg triad and the increase of the basal metabolism, which are characteristic symptoms of exophthalmic goiter, do not exist in the great majority of patients suffering from mastosis. These symptoms, which can-intervention in a patient who had been admitted to the hospital five days after the onset of the symptoms.

Mondor has called attention to the silent evolution of retrocecal pyogaseous abscesses, but usually the cecum yields, and in such instances one finds diffuse peritonitis. In the case just reported the peritoneum was resistant, but the septic process spread in the retroperitoneal cellular tissues and into the abdominal musculature.

SUMMARY

A case of muscular gangrene in a patient with appendicitis is reported. The clinical course, while benign, was attended by a sudden flare-up of symptoms. Operation showed a normal abdominal cavity. Autopsy revealed septic spread in the retroperitoneal cellular tissues and abdominal muscles.

RÉSUMÉ

Gangrène musculaire d'origine appendiculaire

L'auteur rapporte un cas de gangrène musculaire accompagnant une appendicite. Le cas, au début bénign, soudainement eut une aggravation aiguë et grave des symptômes. L'opération montra une cavité abdominale normale. L'autopsie révéla une infection intéressant le tissu cellulaire rétroperitonéal et les muscles abdominaux.

ZUSAMMENFASSUNG

Muskel-Gangrän ausgehend von einer Appendicitis

Es wird von einem Fall von Muskel-Gangrän in einem Patienten mit Appendicitis berichtet. Der klinische Verlauf war zwar gutartig, war aber begleitet von einem plötzlichen Auftreten von Symptomen. Die Operation zeigte eine normale Bauchhöhle. Während der Autopsie fand man eine septische Ausbreitung des Processes in dem retroperitonealen Zellgewebe und in den Bauchmuskeln.

SUMARIO

Gangrena muscular de origen apendicular

Un caso de gangrena muscular en un enfermo con apendicitis es reportado. El curso clínico, aunque benigno, fué acompañado por un brote sintomático repentino. La operación demostró una cavidad abdominal normal. La autopsia reveló una difución septica del tejido celular retroperitoneal y los musculos abdominales.

RIASSUNTO

Gangrena muscolare da appendicite

Viene riportato un caso di gangrena muscolare in un malato d'appendicite. L'andamento benigno del caso fu interrotto da un improviso risveglio della sintomatologia. All'atto operatorio la cavità addominale si dimostrò normale. All'autopsia i tessuti cellulari retroperitoneali e i muscoli addominali mostrarone infiltrazione settica.

function may occur under the aspect of simple hyperthyroidism (which is most frequently the case) or as true dysthyroidism of a basedowian type, such as appears in the course of mastosis complicating exophthalmic goiter.

The association of ovarian and thyroid endocrine dysfunction is necessary *for the origin of mastosis.* This fact explains why not all the forms of hyperthyroidism or all the cases of exophthalmic goiter are associated with mastosis and why not all endocrine ovarian dysfunctions induce disturbances of the breast.

DIAGNOSIS

The diagnosis of mastosis is simple, as it is based on the clinical and anatomicopathologic characters of the disease described in the definition of the word mastosis.

The disease develops in women of postpubertal or preclimacteric age or in those who have recently suffered from some disease of the genital organs. The majority of the patients are of the longilineal type and lean. The development and erectness of their breasts are in contrast with their types. They are emotional, restless and sensitive. The sexual functions may be altered: The patients have a moderate sexual appetite or are frigid.

Frequently the ovarian disorders are associated with partial or total enlargement of the thyroid, which sometimes is transient and appears a few days before development of the acute symptoms of the breast. Symptoms of slight hyperthyroidism, such as tremors and tachycardia, are frequent. The presence of thyroid disturbances must be ascertained with care, as the symptoms may be so slight as to be overlooked.

An oscillating evolution, with aggravations before and during menstruation, the frequency of *bilateral involvement* and the tendency of the disease to involve the entire gland (even in the unilateral form) are characters of diagnostic value.

In making a diagnosis it is advisable to keep in mind that mastosis may appear under different aspects in accordance with its evolutional phase. The classic aspect of Reclus' disease, at the terminal phase, is shown by the breast, *with irregular enlargement due to the presence of disseminated multiple cysts, which simulates a small bag containing shot. This aspect occurs rarely.* Frequently the breast shows the presence of painful nodules and of multiple indurations of restricted mobility and without precise limits.

The lack of adhesion of the gland to the skin, the absence of retraction of the nipples, and the painful sensibility of the tumefaction to palpation, even if gently done, are all characters of great importance for the differential diagnosis.

The clinical differentiation from nodular cancer of the breast is simple *in diffuse forms. In mastosis with only* one nodule, cancer is differentiated by its adhesion to the skin, the retraction of the nipple and the special hardness of the tumor. In cases in which the diagnosis is doubtful, owing to the age of the patient or to special aspects of the breast, and, also, when transformation of a mastosic nodule into cancer is suspected, it is advisable to perform a biopsy and have a *histologic study made* by a competent physician, as soon as possible.

The presence of enlarged lymph nodes, which can be palpated in the axilla, does not represent a differential *character of cancer of the breast.* They may be absent in cases of epithelioma, and they may be present in mastosis. Their presence has no more value than that of an epiphenomenon.

Roentgen examination of the breast is of diagnostic value. Large mastosic *cysts show as transparent spots with* well delimited contours in the roentgenograms. The mastosic nodule on the breasts of elderly women showed, in confirmation of previous reports, that there is an analogy between mastosis and senile involution of the breast (Gatta).

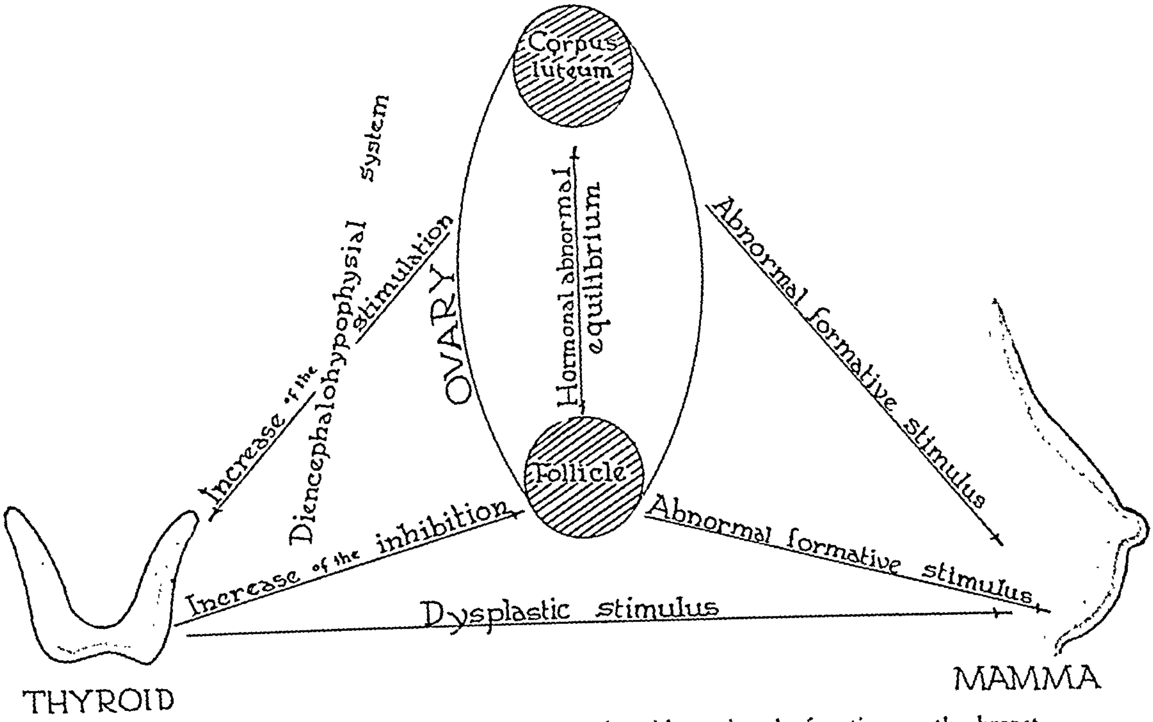
Corpus luteum
Diencephalohypophysial System
Increase of the stimulation
OVARY
Hormonal abnormal equilibrium
Abnormal formative stimulus
Follicle
Increase of the inhibition
Abnormal formative stimulus
Dysplastic stimulus
THYROID
MAMMA

Fig. 1. Diagram showing the action of the thyroid-ovarian dysfunction on the breast.

Studies on endocrinology have pointed out the relations between ovarian and thyroid functions and the influence of the thalamo-encephalohypophysial system in regulating the hormones of endocrine glands, especially the thyroid, gonadal, adrenal and cortical hormones.

As I observed in many cases of mastosis that a more or less evident dysfunction of the ovary, especially with disorders of the folliculin-lutein equilibrium, was associated with an alteration (even if transient) of the thyroid function, I concluded that in the pathogenesis of mastosis the hormonic folliculin-lutein disequilibrium plays a part in association with a dysfunction of the thyroid.

In fact, in a course of studies made on a group of fifty-three patients, with histologic studies in twenty-five cases, it was found that: (*a*) in the majority of cases the first disturbance involves the ovarian function; (*b*) the symptoms of the breast appear after those of thyroid dysfunction; (*c*) folliculin or antithyroidin administered alone is insufficient to induce regression of mastosis, but this regression takes place when these hormones are administered together.

It has been observed that alterations of sexual functions and mammary disturbances are frequent in women suffering from exophthalmic goiter (Kocher, Griffith, Lazzarini and Frassi). Different interpretations have been given to those disorders which are etiologically related to the presence of associated thyroid and ovarian dysendocrinism.

Frassi and I reported cases of mastosis complicating exophthalmic goiter; the patients recovered after medical or surgical treatment for goiter. I also presented at the congress of the Italian Society of Surgeons in 1937 a woman who, shortly after parenteral adminis-

Iversen, Lazzarini and Coggi). However, failures of the treatment and recurrences have been reported, although great *improvement* of the disease and even complete recovery have been attained with the treatment in many cases. Great aggravation of the disease has been reported in some cases from the use of folliculin administered alone (Dahl-Iversen, Cutler). The unreliability of this therapeutic method has been proved by me, although I have obtained permanent recoveries in certain cases, especially in the early development of the disease in young women.

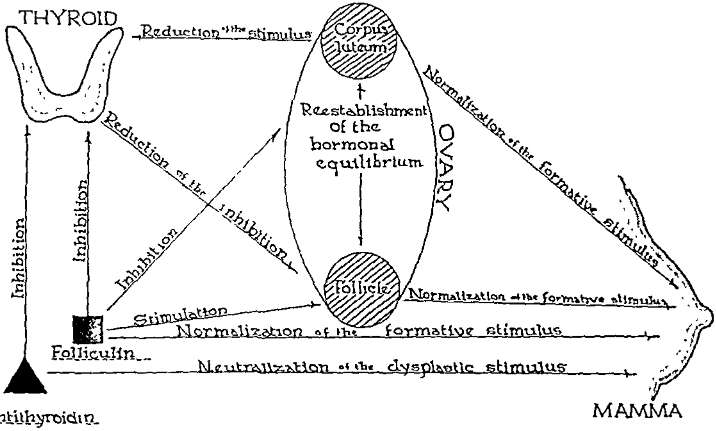
THYROID
Reduction of the stimulus
Corpus luteum
Reestablishment of the hormonal equilibrium
OVARY
Normalization of the formative stimulus
Reduction of the inhibition
Inhibition
Inhibition
Inhibition
Follicle
Normalization of the formative stimulus
Stimulation
Normalization of the formative stimulus
Folliculin
Neutralization of the dysplastic stimulus
Antithyroidin
MAMMA

FIG. 5. Diagram illustrating the complex action of antithyroidin and folliculin on the thyroid-ovarian function and on the mastosic changes of the breast.

In the early forms, when the dysfunction *of the thyroid and ovary is slight*, satisfactory results can be attained by administration of only one hormone, *which corrects only* the thyroid dysfunction, such as the antithyroid serum which I use or diiodo-tyrosine (flajanine) which is used by Frassi.

The earliest result of the combined folliculin-antithyroidin treatment is the improvement of the emotional state of the patients, who appear more tranquil. The feeling of anxiety and also the tremor and tachycardia, if present, disappear. Simultaneously the condition of the breast improves: Hardness diminishes, the nodules decrease in size and disappear, and pain stops.

The general condition of the patients rapidly improves; they gain weight, the ovarian function is well balanced, menstruation is more regular, dysmenorrhea is relieved, and in some cases certain forms of intractable leukorrhea disappear.

The mechanism by which the combined folliculin and antithyroidin treatment acts on *mastosis, as well as the* action of ovarian and thyroid hormones on the breast and the reciprocal influences between the thyroid and the ovaries, with or without interference of the thalamo-encephaloh [illegible] vsial system, is complicated.

In these cases, in [illegible] istration of only one h not be induced by the administration of simple thyroxin, are induced by the administration of thyreo-stimuline, which acts not only on the thyroids, but also on the hypothalamic centers, by inducing neurocrinia.

The frequent unilaterality of the symptoms of mastosis is not a sufficient argument for placing the bilateral forms, including Reclus' cystic disease, on different pathogenetic grounds or, rather, for admitting the rôle of a thalamo-encephalic factor, with exclusion of the endocrine factor in the pathogenesis. The most plausible theory is that there is unilateral sensibility or predisposition of the mammae at the time when the thyroid-ovarian dysfunction acts, which results in a selective action on the mamma. The mechanism is analogous to that by which unilateral symptoms appear in the course of other diseases of endocrinopathic origin, such as exophthalmic goiter, acromegaly and scleroderma.

It must be admitted, moreover, that the participation of the thalamo-encephalohypophysial system in the pathogenesis of mastosis is limited to the regulation of the hormones, although the latter, under certain conditions, may be altered by modified stimulations of the folliculin-lutein disequilibrium, that is, by alterations of the ovarian function, which can be modified by various concomitant causes.

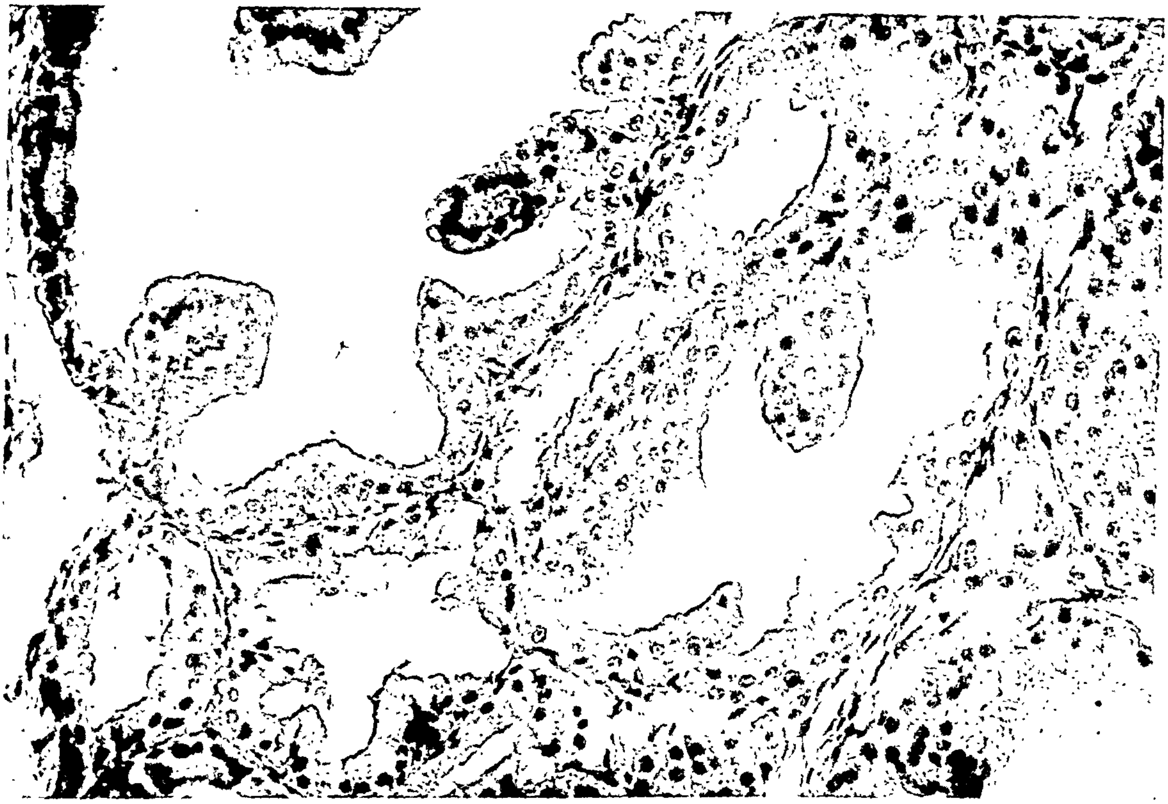

FIG. 3. Markedly increased pale epithelium. The state of vacuolar and lipoid degeneration of the cells is observable; these have the appearance of syncytial cells. This picture shows the ultimate evolution of the mastosic process evidenced in degeneration of the mobile elements of the mammary gland.

As I have stated in previous articles,[1] the main pathogenetic factor of mastosis is an associated endocrine dysfunction of the ovaries and the thyroid. The most evident, and in many cases the earliest, dysfunction of the ovaries shows in disturbances of the folliculin-lutein equilibrium. The thyroid dys-

DIFFERENTIATION BETWEEN PARIETAL AND VISCERAL PAIN IN SURGICAL DIAGNOSIS*

WILLIAM BATES, M.D., F.A.C.S., F.I.C.S.

PHILADELPHIA

WHILE I was a student the method of examining the abdomen was outlined to my class. Tenderness found in various locations was supposed to mean certain visceral disturbances. Unfortunately, examination of an abdomen today may not give me such a clear picture as I was led to believe could be elicited. The reason for this confusion at the end of an examination today is because I have become fully conscious of the fact that there is between my examining finger and the underlying viscera or organ, whether abdomen, head, neck, chest or extremities, the covering layers of the body which are subject to pain and tenderness themselves. In order to simplify this discussion I shall limit myself for the moment to the abdomen. As one palpates the abdomen in order to make a differentiation between a medical and a surgical diagnosis or to account for the subjective complaint of pain, it is hard not to think constantly of the viscera under one's fingers rather than of the intervening abdominal wall. A conservative estimate of abdominal pain, I believe, would show that at least 50 per cent of the patients have pain in the abdominal wall and not in the viscera.

When the late Dr. Carnett tried to clarify this pain he referred to it as intercostal neuralgia. This term immediately attracted attention to the chest wall, for it seems hard to remember that the seventh, eighth, ninth, tenth, eleventh and twelfth thoracic and first dorsal nerves all end on the abdominal wall. Since that time I have tried to change the name to parietal neuralgia, because what is true of the abdominal wall in reference to abdominal viscera is true of the whole body covering from head to foot.

The pathologic cause for the pain and tenderness inherent in the surface covering is best shown by the distribution of the spinal nerves to the abdominal wall. As the spinal nerve emerges there are a posterior branch given off to the back, and an anterior portion, which divides to supply three different levels. The superficial branch supplies the skin and subcutaneous fat. The median branch supplies the muscle and fascia, and the deep branch supplies the peritoneum and the preperitoneal fat. Tenderness may be in any one, any two, or all three of these branches. As one starts to examine an abdomen and finds that the mere touch of the finger causes the patient to complain of tenderness, one must establish some standard of how much pain the patient can stand. For this purpose the superficial tissues over the lower end of the ulna are grasped between the thumb and index finger and pinched until the patient shows displeasure. The amount of force used should be that tolerated any other place on the body. Therefore, if less pressure causes tenderness, the area is hypersensitive. To determine this sensitiveness one picks up a liberal fold of abdominal skin and fat and pinches only until it hurts. One does not attempt to punish the patient. In 5 per cent of cases of parietal neuralgia this superficial layer may not be tender. One then pokes the abdominal wall with a stiff index finger; frequently if the muscle slack is taken up by pressing in shows as a shadow with well delimited contours. The cancerous nodule shows as an opaque shadow of evanescent contours. Mammary adenofibroma and fibro-adenoma are more mobile than mastosic nodules, and their contours are more precise than those of the tumors. They are painless and are not tender to palpation.

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* Read at the Second Annual Assembly of the United States Chapter of the [illegible] of Surgeons, Oct 13, 1938

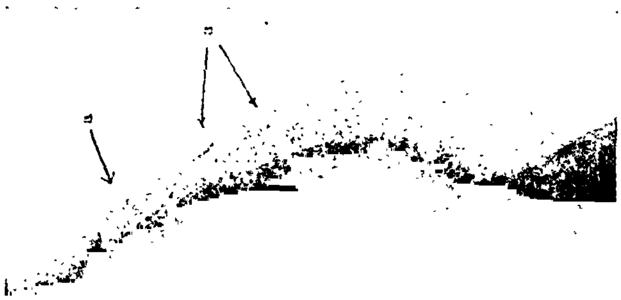

FIG. 4. Roentgen appearance of a breast with numerous cysts (*a*).

The differential diagnosis between mastosis and lipophagic granuloma of the breast is simple. There is a history of trauma or of injection of lipovaccine or of paraffin in almost all cases of lipophagic granuloma. The tumor involves the subcutaneous tissues of the breast and adheres to the skin. Women suffering from lipophagic granuloma are generally obese and of a peaceful character, whereas those suffering from mastosis are lean and fretful.

Galactocele is more rare and painful than mastosis. It develops in nursing women. The inflammation is more intense than that of mastosis.

Tuberculosis of the breast, specially with disseminated nodules, gives the breast a nodular character. On palpation the nodules are similar to those of mastosis. The differential diagnosis is made by the rarity of tuberculosis in comparison to mastosis, the possible coexistence of pulmonary tuberculosis, the more intense dulness of tuberculosis nodules, the frequent presence of axillary adenopathy, retraction of the nipples, adhesion of the tuberculous nodules to the skin and, especially, the absence of endocrine ovarian and thyroid disturbances, which are characteristic of mastosis.

Nodular syphilis of the breast may also be a cause of diagnostic mistakes. Syphilis of the breast is rare. The diagnosis is made by the coexistence of other symptoms of syphilis and by the serologic tests.

TREATMENT

The surgical treatment of mastosis, which in the near past was justified by insufficient knowledge of its origin, the impossibility of controlling its evolution and the observation of transformation into malignant neoplasms, has lost its aggressive and destructive character. The indications for surgical intervention are now few and well defined, and operations are not destructive.

Young girls and women in the prime of life need no longer be subjected to mutilation of one or both breasts. Surgical intervention, if indicated because of the presence of persistent large mastosic nodules, will consist in removing the mammary lobe which is most involved in the pathologic process through an economical and esthetic wound.

Amputation of the breast followed by dissection of the axillary space is justified only in cases of obvious mastosis with malignant transformation.

The present knowledge of the pathogenesis of the disease and the results of studies on endocrinopathy and hormonal therapy indicate that mastosis should be treated by opotherapy, and only if this fails should surgical treatment be resorted to.

As I have stated in previous articles, the hormonal treatment is directed toward reestablishing the equilibrium of the ovarian functions and controlling the thyroid dysfunction.

Folliculin has been successfully used in controlling the ovarian dysfunction (Cutler, Gabrielianz and Taylor, Dahlpupil, there is no danger in the procedure.

In bimanual vaginal examination, for instance, the patient is frequently advised to have general anesthesia to make possible a better examination. Frequently the cause of this is tenderness elicited by the hand on the abdomen. Injecting both sides of the abdomen as I described for differentiation for appendicitis frequently permits a much more satisfactory and conclusive bimanual examination.

Sometimes decision to operate is based on bone tenderness, yet if the overlying soft tissues are pinched it will be found that the tenderness is superficial. I have prevented a mastoid operation on this evidence without dire result to the patient. In severe headache, if a certain area of tenderness can be detected on the back of the skull or in the posterior cervical region, an injection can be given and the patient relieved. This injection, except in rare cases, affords only temporary relief and aids only in differential diagnosis; yet how comforting it is to the patient to have relief of pain while the cause of it is being sought!

Among the causes found for parietal neuralgia are trauma, toxi foci (particularly in the nose and throat), postural defects, any combination of the aforementioned three factors, endocrine imbalance, spinal arthritis and metatastic malignant conditions of the spine.

The treatment of the condition is elimination of the cause, as in any other curative problem.

I have not tried to present a new disease, a new treatment or a new technic, but have tried to emphasize that between the examining finger and the organ underneath there is a nerve-bearing layer of tissue which must be considered in making a differential diagnosis.

SUMMARY

There is a marked similarity between visceral pain and parietal pain, whether involving the abdomen, chest, head or extremities. Differential tests between the two are detailed which have been found useful in making surgical diagnosis as well as in preventing unnecessary surgical intervention.

The use of novocain is intended for differential diagnosis but has frequently given rather lasting relief. By that is meant that the cycle of pain is broken.

The errors eliminated by differential diagnosis are not only wrong operative diagnosis but frequently errors classified as operative failure.

The use of novocain for differential diagnosis does not endanger the patient as much as a hypodermic injection of morphine might.

RESUMÉ

La Douleur Pariétale et Viscérale dans le Diagnostic Chirurgical

Il y a une resemblance frappante entre la douleur viscérale et la douleur pariétale, qu'il s'agisse de l'abdomen, de la poitrine, de la tête ou des extrémités. Des épreuves différentielles sont décrites minutieusement. Elles sont utiles pour établir un diagnostic chirurgical et pour prévenir des interventions inutiles. L'emploi de novocaïne auquel on avait eu recours pour préciser un diagnostic a fréquemment été suivi d'un soulagement à peu près complet. Le cycle de la douleur a été brisé par ce procédé. Le diagnostic différentiel élimine un faux diagnostic opératoire et aussi souvent des erreurs diagnostiquées insuccés opératoire. L'emploi de la novocaïne pour le diagnostic différentiel entraîne moins de danger que l'injection sous-cutanée de morphine.

RIB AND VERTEBRAL ANOMALIES

PATHOLOGIC IMPORTANCE IN INJURIES OF THE KIDNEYS[*]

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SANTIAGO, CHILE

THE form of injury, without an external wound, which produces rupture of the kidney may be a direct blow over the lower rib or on the loin or an indirect injury such as a fall from a certain height on the buttocks or forcible acute flexion of the body with intense muscular exertion. According to almost all anatomists and clinicians, the kidney is well protected by the lower ribs and spinal muscles; therefore injuries to this organ are comparatively rare. This fact is true when the kidney occupies its normal position and when the skeletal parts in relation to it are normally developed.

During the past few years my associates and I[1] have studied the pathologic changes of so-called renal ribs and vertebrae, some of which have already been pointed out by various authors.

ANOMALIES OF RIBS

The twelfth rib is undoubtedly the renal rib. Radiologic anatomy has taught that in normal subjects it crosses either the upper pole of the kidney or it crosses the middle third and practically divides the renal pelvis in two. The larger the number of x-ray plates one examines the greater the varieties and changes one will note in this bony structure. While it preserves its arcuate structure, one will find short or long twelfth ribs alternating on one or both sides. The short type has a tendency to lose its inclination downward and become horizontal, in some cases its distal extremity almost coming in contact with the body of the eleventh rib.

ANOMALIES OF VERTEBRAE

True variations in number of lumbar vertebrae have been reported by various authors. Congenital absence of one or several of them is exceptional. A true supernumerary lumbar vertebra, demonstrated by a total x-ray count of the vertebral column, is more frequent.

According to our observations as registered by aortograms, there are two types of interpositions: a cephalic, or dorsolumbar, and a caudal, or lumbosacral. In the first form the renal arteries rise lower down from the aorta. The primitive plan of organic distribution is not presented; the renal vertebrae in this case are represented by only the first three lumbar ones. In the second type the kidneys have not changed their superior relations; the only difference is a longer distance from the inferior poles to the iliac crest. The ureters are longer, as can be proved by pyelograms.

MUSCLES AND LIGAMENTS

The posterior muscular relations of the kidneys are the diaphragm, and the anterior layer of the transversalis aponeurosis which separates it from the quadratus lumborum muscle. The psoas muscle is also related to a small part at its lower pole. Both the quadratus muscle and the psoas muscle have superior connections with the twelfth rib. When it is absent or extremely short the muscle fibers insert themselves principally along the lower border of the eleventh rib. In cases of agenesis or shortness of the twelfth rib the costovertebral ligament [illegible] on the with the finger, tenderness is elicited, which *may* be interpreted as being visceral.

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[*] From the Clinical Hospital Urologic Clinic,

With the fingers it is impossible to differentiate between the median and the deep layers. When the parieties have been found tender to touch, it is many times impossible to tell how much of that tenderness is in these and how much in the underlying viscera. If the Head-MacKenzie theory of referred pain were correct, the confusion would be still greater, but of course that theory cannot be substantiated.

When examining the abdomen, if there are no tenderness on pinching and no evidence of parietal tenderness, the next step of the examination is an interesting and, to me, a valuable one in differential diagnosis. The patient is told to tense the abdominal wall by raising both feet with the knees straight, or by blowing out the abdomen, and one again presses over the area where the patient complained of tenderness. If all tenderness has now disappeared, one feels convinced that the underlying viscera now protected by the overlying muscle is the seat of tenderness.

In the case of the right lower quadrant, this differentiation has caused me to decide to operate even though some of the other cardinal symptoms of appendicitis were conspicuous by their absence. In cases in which parietal tenderness is present, tightening of the abdominal wall and then palpation still reveal tenderness but tell nothing as to what might be underneath. This hurdle is overcome by blocking off the nerve supply to that part of the abdominal wall under suspicion by the use of novocain.

In the right lower quadrant this blocking off is rather simple. The ilioinguinal and iliohypogastric nerves can be located under the fascia of the external oblique muscle 1 inch (2.54 cm.) in from the anterosuperior iliac spine on a line to the umbilicus. Five cubic centimeters of 2 per cent novocain deposited here will in a few minutes desensitize the area supplied by the twelfth dorsal and first lumbar nerves, which includes the belly wall overlying McBurney's area. An area above parallel to Poupart's ligament and one below also parallel to Poupart's ligament on the thigh, one high up on the inner aspect of the thigh and another in the gluteal region from the crest of the iliac bones down to the level of the greater trochanter from the sacroiliac joint lines to the midaxillary lines.

Fortunately the viscera are not supplied by these spinal nerves, and desensitizing the covering tissues does not mask any tenderness in the viscus. As a matter of fact, when the belly wall is desensitized a degree of protectiveness is removed from the underlying viscera, and if they are diseased tenderness is elicited more readily than before the injection. With the belly wall desensitized, palpation is again made with the abdominal wall relaxed. If all tenderness has disappeared, the former tenderness was in the anterior portion of the abdominal wall. If tenderness still exists on palpation the viscus underneath is at fault, and if the abdominal wall is tightened pressure should not elicit tenderness.

It is unfortunate that one cannot differentiate between visceral and parietal tenderness merely by tightening the abdominal wall, but in cases in which the muscle tightness prevents all tenderness from being elicited the deep branch to the peritoneum and peritoneal fat is protected by the tight muscles as well as the viscus. Therefore this branch has to be desensitized to permit a proper conclusion.

The use of novocain in making differential diagnosis adds less than five minutes to the examination, and unless the patient shows signs of idiosyncrasy to novocain by having a widely dilated

SUMARIO

Anomalias vertebrales y de las costillas en lesiones del riñon

En rupturas traumáticas del riñon el aumento de tamaño de las areas no protegidas de la superficie posterior del riñon y la debilidad de la defensa muscular debído á las anomalias de las costillas del area renal y de las vertebras son factores de gran importancia. En un aspecto médico, leyes de accidente del trabajo y escala de compensación deben de tener en cuenta ésta condición.

RIASSUNTO

Anomalie costali e vertebrali nei traumi renali

Nella rottura traumatica del rene, l'aumento di volume della faccia posteriore de questo organo e la debolezza della difesa muscolare, dovuta ad anomalie delle coste o delle vertebre, sono di grande importanza. Da un punto di visto medico-legale, specialmente negli accidenti di lavoro, questi fattori vanno considerati.

Prof. Johannes Lange, ordinarius in psychiatry at Breslau, died at the age of 47. He was a pupil of Kraepelin, was particularly interested in cerebral pathology and genetic research and was the author of "Crime as Destiny."

Dr. William C. Hunsicker, Director of Public Health of Philadelphia, clinical professor of urology at Hahnemann Medical College and Hospital of Philadelphia, and Senator of the Pennsylvania State Legislature for many years, died January 10, aged 65.

Sir Colin MacKenzie, M.D. (Melbourne), F.R.C.S. (Edinburgh), F.R.S. (Edinburgh), founder and first director of the Australian Institute of Anatomy at Canberra, has died. He was noted for his early studies on the organism of syphilis and especially for his researches in orthopedics. He was the author of "The Action of Muscles, Including Muscle Rest and Muscle Reeducation" and was well known as a collector of Australian anatomic faunal specimens

ZUSAMMENFASSUNG

Parietal und viszeral Schmerz in chirurgischer Diagnosestellung

Es besteht eine ausgeprägte Uebereinstimmung zwischen viszeralem und parietalem Schmerz, ob es sich im Bauch-, Brust-, Kopf- oder Extremitätenaffektionen handelt. Differentialdiagnostische Hilfsmittel zur Unterscheidung zwischen beiden sind beschrieben, die sich sowohl beim Stellèn einer chirurgischen Diagnose als auch zur Verhütung unnötiger chirurgischer Eingriffe als nützlich erwiesen haben.

Der Gebrauch von Novokaïn ist für differentialdiagnostische Zwecke gedacht, gibt aber häufig länger anhaltende Besserung der Beschwerden. Dabei ist gemeint, dass die "Schmerzkette" unterbrochen ist. Die Irrtümer, die bei disen differentialdiagnostischen Erwägungen ausgeschaltet werden, bringen nicht nur falsche chirurgische Indikationsstellung, sondern häufig auch sogenannte Operationsmisserfolge mit sich. Die Anwendung von Novokaïn zu differentialdiagnostischen Zwecken gefährdet den Patienten weniger als subkutane Injection von Morphin.

SUMARIO

Diferenciación entre el dolor parietal y viceral para llegar a un diagnóstico quirúrgico

Hay una marcada similaridad entre dolor viceral y parietal, cuando envuelven el abdomen, pecho, cabeza ó extremidades. Pruebas para el diagnóstico diferencial entre los dos están detalladas las cuales han sido halladas útiles al hacer diagnosticos quirúrgicos así como tambien para prevenir operaciones quirúrgicas sin necesidad. El uso de novocaina es intentado para el diagnostico diferencial, pero con frecuencia ha dado alivio largo. Con esto se quiere decir que el ciclo del dolor está roto. Los errores eliminados por el diagnóstico diferencial no son solamente equivocaciones del diagnostico operativo sino frecuentemente errores clasificados como fracasos quirúrgicos. El uso de novocaina para el diagnóstico diferencial no pone el enfermo en peligro tanto como una inyección de morfina puede ponerlo.

RIASSUNTO

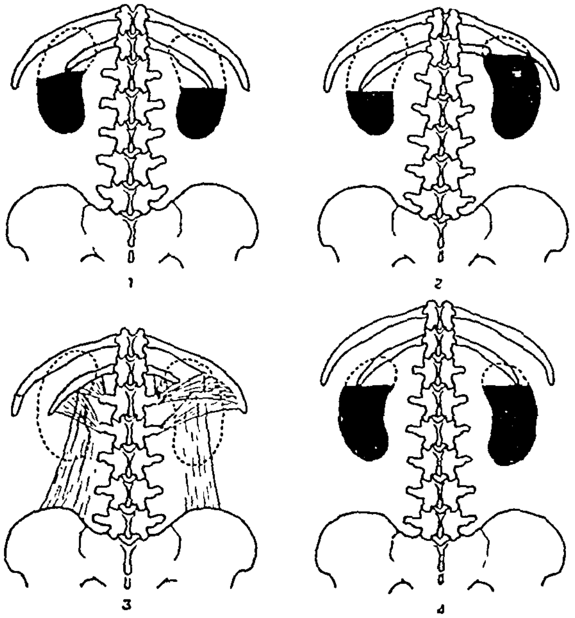
Dolore viscerale e periferico nelle diagnosi chirurgica

Vi è una marcata somiglianza nelle manifestazioni dolorifiche di origine viscerale o di origine periferica. Metodi di differenziazione sone presentati in dettaglio e l'utilità nella diagnosi differenziale è discussa. L'uso di injezioni di novocaina nella zona dolorifica ha grande valore differenziale ed è spesso seguito da beneficio duraturo. Questa rottura del ciclo doloroso porta all'eliminazione di errori diagnostici e spiega altri errori terapeutici.

L'uso di novocaina nella diagnosi differenziale non importa alcun pericolo per il paziente, come spesso avvienne da injezioni di morfina, derivanti dalla mascherazione di importanti sintomi.

* * *

inferior border of the eleventh rib; owing to this fact it is longer than normal and must necessarily be weaker.



Figs. 1, 2, 3 and 4. Sketches illustrating how anomalies in the structure of the twelfth rib and the muscular relations of the kidney give rise to unprotected renal areas.

Most of the anatomic changes cited in the preceding paragraphs increase the size of unprotected areas of the posterior surface of the kidney and diminish the effectivity of muscular defense (figs. 1, 2, 3 and 4). Since the advent of descending pyelograms we have been able to study eleven cases of rupture of the kidney. In six (four of our clinic and two of the Salvador Hospital) we could establish the existence of a supernumerary lumbar vertebra of the cephalic type, in two a short rib and in the remaining three no anatomic change whatever and no evidence of previous kidney disease. In most of the cases with an anomalous skeletal substratum the intensity of the injury was not of such a degree as to make one expect severe damage to the kidney.

SUMMARY AND CONCLUSIONS

In traumatic rupture of the kidney the increase in size of the unprotected areas of the posterior surface of the kidney and the weakness of the muscular defense caused by anomalies of ribs and vertebrae are factors of great importance. In our series they represent 72.7 per cent of the cases.

From a medicosocial aspect, labor accident laws and those dealing with questions of compensation scales should bear these facts in mind.

BIBLIOGRAPHY

1 Coutts, W. E.; Banderas, T., and Cantin, F.: Contribution à l'étude des syndromes rénaux causés par l'existence de six vertèbres lombaires, J. d'urol. 44:467, 1937.

RÉSUMÉ

Anomalies costales et vertébrales dans les traumatismes du rein

Toute augmentation de l'espace non protégé de la face postérieure du rein et tout affaiblissement de la défense musculaire dûs aux anomalies de côtes et de vertèbres sont d'une importance capitale. Du point de vue médico-légal, surtout dans les accidents du travail, ces facteurs méritent d'être considérés.

ZUSAMMENFASSUNG

Rippen- und Wirbelanomalien in Nierenverletzungen

In Fällen von traumatischer Nierenruptur ist die vermehrte Grösse der ungeschützten Stellen an der hinteren Nierenoberfläche und die Schwäche der muskulären Schutzschicht, wie sie durch Anomalien der Rippen und Muskeln bedingt ist, von grosser Wichtigkeit. Vom sozial medizinischen Standpunkt gesehen, sollten die Unfallgesetze und Rentensatze diese Tatsachen berücksichtigen.

States (which Dr. Bainbridge represents) The central bureau of the Congress is located in Liége, Belgium.

The International Office of Medico-Military Documentation is a daily working activity of the Congress and is located in the Military Hospital at Liége. Here are collected books, documents, published and unpublished articles on medico-military topics, and various material related to the medical services of the countries of the world, not of a confidential nature Accredited representatives of governments are at liberty to utilize this office for reference, and there is a department that answers technical questions received by mail

The business and scientific program of the **Ninth Session of the International Office of Medico-Military Documentation** is in the hands of Dr William Seaman Bainbridge (Captain, Medical Director, United States Naval Reserve), and the New York Hospitality Committee is headed by Dr Lucius A. Salisbury (Colonel, New York National Guard). Besides the papers presented there were visits to important medical, scientific and other centers, a luncheon, and a gala banquet in honor of the distinguished guests from overseas, of about 1,500 persons, followed by dancing, on the evening of May 18.

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National Gastroenterological Association

The National Gastroenterological Association met in New York City, May 31, June 1 and 2. On May 31 a reception was held at the *Professional Building of the New York World's Fair*. The scientific sessions, on June 1 and 2, under the chairmanship of the President, Dr. Anthony Bassler, were held in Squibb Hall, the Squibb Building. The following papers were read:

The Rôle of Circulatory Disorders in the Diagnosis of Lesions of the Gastro-Intestinal Tract. Dr J. Stewart Rodman and Dr. William G Leaman, Philadelphia.

A Consideration of the General Problem of Gastric and Duodenal Ulcer (illustrated with lantern slides) Dr. James J. Hepburn, Boston.

The Causes of Poor Results in the Operative Treatment for Duodenal Ulcer. Dr. Hubley R. Owen, Philadelphia.

The Anemias Versus Gastro-Intestinal Disease. Dr. Samuel A Loewenberg, Philadelphia.

The Control of Hemorrhage in the Jaundiced Patient Dr I S Ravdin and Dr. J. E. Rhoads, Philadelphia

Report of a Case of Segmental Jejuno-Ileitis. Dr. Max Einhorn and Dr. Otto C. Pickhardt, New York.

Disorders of Calcium Metabolism in Diseases of the Gastro-Intestinal Tract Dr. Charles L. Brown, Philadelphia.

An Evaluation of Liver Function Tests. Dr. Frank W. Konzelmann, Philadelphia.

Conservatism in Surgery of the Pancreas. Dr. George W. Papen, Boston

The Surgical Management of Acute Cholecystitis Dr. John F. McCloskey and Dr James A Lehman, Philadelphia

The Therapy of Colon Stasis. Dr. Bernard Fantus, Chicago

Gastro-Intestinal Tuberculosis Dr. Ellis B. Freilich, Chicago.

Immunity in Hookworm Disease Dr. William Walter Cort and Dr Gilbert Fred Otto, *Baltimore.*

Gastro-Intestinal Disturbances Due to Bacterial Toxemia from Focal Infection. Dr. Myer Solis-Cohen, Philadelphia.

Congenital Bands and Adherences: Symptomatology and Treatment. Dr. Cyrus Warren Strickler, Atlanta, Ga.

Primary and Recurrent Obstruction of the Common Duct. Dr. Moses Behrend, Philadelphia.

Complications of Diaphragmatic Hernia. Dr. I. R. Jankelson, Boston, and Dr. Samuel Morein, Providence, R. I.

Demonstration of Gastric Resection by Motion Picture Film Dr. George Gavin Miller, Montreal, Canada.

Gallbladder Disease and Gallstones (by title). Dr. Bela Halpert, New Orleans.

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The International Hospital Association Congress, under the presidency of Dr. Malcolm T. MacEachern, will be held in Toronto, Canada, next September just before the annual convention of the American Hospital Association, the convocation of the College of Hospital Administrators, the convention of the Protestant Hospital Association, and meetings of other organizations of national scope allied to the hospital field. Among the speakers of International reputation will be: Dr. René Sand, of Belgium, Sir Donald Menzies, the eminent British authority on hospitals; Capt. J. E. Stone, of the Birmingham Hospitals Centre; Mr. Cederstrom, architect, and Dr. W. Alter. A large group of men from Latin America will attend, with practically every country in Central and South America [illegible]ented

MOTION PICTURES OF THE HUMAN LARYNX

SURGICAL SIGNIFICANCE IN NORMAL AND ABNORMAL STATES*

WILLIAM A. LELL, M.D.
PHILADELPHIA

TODAY, more than ever before, there is a definite realization of the importance of photography as an aid in teaching. With the tremendous improvement in photographic equipment and material and the ease with which they may be utilized by the average individual, it is only natural that there should be an enthusiastic trend toward photography as a means of recording interesting observations.

To obtain good photographs of the surface of the body is a relatively easy matter. However, due to the location of the larynx in the human body, photography of this structure offers more of a problem. The outstanding difficulties, in both still and motion pictures, are proper illumination and the adjustment of the apparatus so as to expose the larynx properly for photographing.

As far back as 1883, Lennox Browne[1] was able to obtain pictures of the human larynx with the crude equipment at his disposal. Since that time tremendous advances have been made in this field, so that today it is not unusual to see motion pictures of the human larynx depicting normal and abnormal states, with faithful reproduction of the true color.

Heatly[2] and Pressman and Hinman,[3] using the method of direct laryngoscopy, have reported their technic and results. Lejeune, using the Lynch suspension apparatus, was successful in photographing a large number of human larynges presenting various pathologic conditions. The cumbersome apparatus necessary in utilizing the aforementioned methods and the fact that the patient had to be subjected to direct laryngoscopy have stimulated effort toward developing a simpler method. In this paper, the results of a simplified method are presented.

By this technic the larynx is photographed by mirror laryngoscopy, which makes it possible to set up the apparatus and take the necessary pictures in a few minutes, without subjecting the patient to an operative procedure, as would be required in direct laryngoscopy or with the suspension method.

This paper is concerned with the presentation of motion pictures in color of a series of human larynges. In this group of cases, first is depicted the normal larynx, showing the motility of the vocal cords. Then follow pictures illustrating pathologic conditions, including functional aphonia, paralyses of vocal cords, vocal nodules, and keratosis, cyst and carcinoma of the larynx.

SUMMARY AND CONCLUSIONS

A simplified method of laryngeal photography is presented, together with a series of illustrative cases. Laryngeal photography offers a definite means for obtaining a permanent record of normal and abnormal morphologic states invaluable in diagnosis. Records obtained by the simplified method make available a variety of pathologic conditions for teaching purposes. Laryngeal photography offers unusual opportunity for further investigation in this field of endeavor. Not only in thyroid surgery, but before all major operations, the patient should have a routine laryngeal

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* Read at the Second Annual Assembly of the International College of Surgeons, Philadelphia, Oct. 13, 1938.

Carcinoma of the left ovary and possible carcinoma of the uterus in a woman aged 38.

Umbilical hernia in a woman aged 50.

Tubo-ovarian abscess, possible ovarian cyst or pedunculated fibroid, in a woman aged 34.

Right indirect inguinal hernia and congenital hypothyroidism in a woman aged 26.

Fibromyoma uteri in a woman aged 47.

Acute appendicitis, subsiding, and possible tubo-ovarian disease, in a woman aged 20.

The final clinic was held by **Dr. Bland.** He performed perineal plastic operations on two patients.

At 7 p. m. the group met at the Union League and was entertained at an excellent dinner arranged by *Dr. Bland.*

* * *

News and Personals

NEWS FROM MEXICO

The **Mexican Academy of Surgery** celebrated on February 3 the inaugural session of the academic year 1939 under the presidency of *Dr. Luis Rivero Borrell.*

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The **new civil hospital of Monterrey** was dedicated on February 6. This hospital has been named for Dr. José Eleuterio Gonzalez, whose body *is buried here under a simple monument* commemorating this renowned man of science and great benefactor. The inaugural address was delivered by General Anacleto Guerrero, Governor of Nuevo Léon.

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Construction of a **hospital for oil workers** in the city of Puerto México, Veracruz, is contemplated by the Mexican syndicate of oil workers.

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Dr. José Torres Torija was elected President of the National Academy of Science for 1939.

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A **National Committee for the Study of Industrial Accidents,** corresponding to the International Permanent Committee, has been formed under the presidency of Dr. Manuel A. Manzanilla, Mexican member of the International Committee.

A committee known as the **Socorro Médico Hispanista** has been formed for the aid of gynecologists and surgeons. The president of the *Mexican Academy of Surgery will* preside, and the committee will function in conjunction with the ladies' auxiliary consisting of the wives of members of the Academy.

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A committee of surgeons of the Juárez Hospital is planning a **National Assembly of Surgeons,** which will be the third to take place at this hospital.

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The **University of Mexico** inaugurated its 1939 activities on February 13 in the Bolívar Amphitheater under the presidency of Dr. Gustavo Baz, Rector of the University. Courses in the Faculty of Medicine began February 16.

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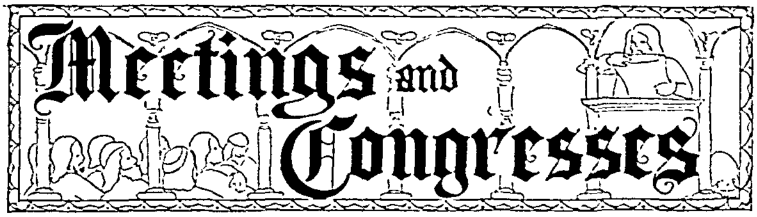
The wives of members of the **Mexican Academy of Surgery** will henceforth be entitled to wear a special insignia designed for them, to be worn during scientific and social meetings of members of the Academy. This distinction was launched at a brilliant meeting at the residence of the former president of the Academy, Dr. Manuel J. Castillejas, on February 4, at which the members of the Academy and their wives participated.



INTERNATIONAL ASSEMBLY OF THE INTERNATIONAL COLLEGE OF SURGEONS

IN CONJUNCTION WITH

THIRD ANNUAL ASSEMBLY OF THE UNITED STATES CHAPTER

May 21 to 25, Inclusive, 1939

Headquarters at Hotel Roosevelt, New York City

Sunday, May 21, 2:00 p. m.

Registration (no registration fee).

Scientific exhibits.

Technical (commercial) exhibits.

Informal reception to distinguished foreign guests, and to out-of-town Fellows, Members and Associate Members and their families and guests.

The evening is free for social activities and visiting points of interest in the city.

Monday, May 22, 9:30 a. m.

Assembly called to order by INTERNATIONAL PRESIDENT DR. ANDRÉ CROTTI.

Invocation.

Addresses of Welcome, by INTERNATIONAL PRESIDENT CROTTI, who will introduce the Governor of the State of New York, who will welcome the Assembly to New York City.

SCIENTIFIC PAPERS

Research in Certain Military Surgical Problems. MAJOR GENERAL C. R. REYNOLDS, Surgeon General, United States Army, Washington, D. C.

Present-Day Tendencies of Lung Surgery. GENERAL DR. CONSTANTIN ILIESCU, Inspector General Medical Service, Rumanian Army, Bucharest, Rumania.

Anesthesia in the United States Naval Service REAR ADMIRAL ROSS T. MCINTIRE, Surgeon General, United States Navy, Washington, D. C.

New Method (Operative) in the Treatment of Coxa Vara Traumatica. GENERAL STANISLAUS ROUPPERT, Surgeon General of Poland, Warsaw, Poland.

LUNCHEON

Luncheon for groups in Hendrik Hudson Room, round table discussion.

Monday, May 22, 2:00 p. m.

SCIENTIFIC PAPERS

The Surgical Reconstruction of the Arthritic Patient. DR. FRANK A. DICKSON, Kansas City, Mo.

Contribution of the Operative Cholangiography to the Physiopathology of the Common Bile Duct. PROF. DR. P. L. MIRIZZI, Cordoba, Argentine.

Common Duct Injuries: Causation and Repair. DR. THOMAS E. JONES, Crile Clinic, Cleveland.

The Genesis of Electrosurgery. DR. A. J. RIVIÈRE, Paris, France.

Involution of the Lesser Curvature of the Stomach as a Complication of Chronic Gastric Ulcer. DR. Y. SEUDERLING, City Hospital "Kivelä," Helsinki, Suomi, Finland.

Monday, May 22, 9:00 p. m.

CONVOCATION (Hendrik Hudson Room)

INTERNATIONAL PRESIDENT DR. ANDRÉ CROTTI, *Chairman*

DR. BENJAMIN I. GOLDEN, *Grand Marshal*

Invocation by REV. NORMAN VINCENT PEALE, D.D., Pastor of the Marble Collegiate Church, introduced by INTERNATIONAL PRESIDENT CROTTI.

Presentation of Fellows, Members and Associate Members of the United States Chapter to DR. FREDERICK M. DOUGLASS, NATIONAL PRESIDENT.

Presentation of diplomas and certificates.

Presentation of Foreign Honorary Fellows to IN-

British Isles, where there will be properly qualified and trained persons to supervise the use of these special machines. They will cost only 25 or 30 English pounds (about $125) each.

In most *acute* respiratory emergencies oxygen *and carbon dioxide inhalators, properly working oxygen outfits* with suitable tents and oxygen analyzers are of much greater use for all general purposes and much more frequently of life-saving value than the large, cumbersome Drinker and Emerson iron lungs. Incidentally, the latter cost about $1,450 each, and are useful almost solely in cases of infantile paralysis with respiratory failure (that is, they are of value only in cases of *prolonged* respiratory paralysis).

Often, as in migraine, coronary thrombosis, asthma and severe anemia (anoxemia) the "B-L-B" Inhalation Apparatus (Boothby, Lovelace and Bullbulian) is very useful.

The BRAGG-PAUL PULSATOR is a pneumatic jacket for applying rhythmic positive pressure, and is a very convenient and effective apparatus. The DRINKER and BOTH machines and the EMERSON modification are total enclosure instruments; the entire body, with the exception of the head, is enclosed in the apparatus. The BRAGG-PAUL apparatus is much preferred by some English experts to the Drinker-Emerson type.

The BURSTALL apparatus applies negative pressure and resembles a cuirass. The BIOMOTOR is a German apparatus. There is also an apparatus recently introduced in Sweden.

It is highly essential that whatever type of respirator is used, especially trained persons must supervise its use. If a respirator is handled unskilfully, the patient may die!

Expert and very gentle *nursing* and good medical care are essential.

Careful team work is at all times necessary in these emergency cases where the respirators are used.

Hyman I. Goldstein, M.D.,
Camden, N. J.

To the Editor:—Except for the slight scolding to my brother for not mentioning Woillez, Dr. Goldstein's note is substantially the same as the letter he published in the *New England Journal of Medicine* for April 6, 1939, page 612. A considerable series of letters on "iron lungs," Lord Nuffield's proposed gift of five hundred machines to Great Britain, etc., have been appearing recently in the *Lancet* and the *British Medical Journal*. Several of these letters discussed the Woillez device, of which Dr. Goldstein appears to think we were ignorant.

Professor Thunberg told us of the Woillez apparatus in 1926 or 1927, when Shaw and I were working on the experimental apparatus which would be applicable in treating respiratory failure in poliomyelitis. I do not remember the exact date of Thunberg's letters, but the Woillez citation appears in Enghoff's monograph (*Skandinav. Arch. f. Physiol.*, vol. 52, 1927), which Thunberg sent us. We have continually exchanged data with him.

There is *nothing* in Woillez' papers which would help any *one confronted* with our problem. Somewhere Osler mentioned the fact that respiratory failure in Landry's palsy could be treated with a mechanical device. I do not doubt that many others had the same idea long before us. About one-half minute in a modern "iron lung" will convince a skeptic that the device is likely to be effective in respiratory paralysis of any sort. Woillez was interested in the treatment of suffocation as an emergency proposition. His experiments were performed on animals and on human cadavers. He gave *no* figures whatever as to the pressure changes needed.

The only claim to discovery that we have ever made is that we measured the pressure changes needed to induce respiration. Why that had not been done before, I cannot explain, but as soon as we realized how small these changes were, it was an easy matter to mechanize the process.

Dr. Goldstein's admonitions on the need of trained personnel have *one* very serious omission, as far as poliomyelitis is concerned. The patient is acutely ill and extremely sensitive to pain and to any irritation, as of the skin. A device which will tide over a little child for a week or so through such a catastrophe as respiratory embarrassment must be comfortable, but no mechanical appliance will take the place of unremitting nursing and medical care of the most exacting sort.

Philip Drinker.
Professor of Industrial Hygiene,
Harvard University.

To the Editor:—I read Dr. Philip Drinker's letter of April 21, 1939. The *important* fact remains that neither Dr. Cecil K. Drinker (Professor of Physiology, Harvard University), in his early publications and in his monograph on "Carbon Monoxide Asphyxia" (March 1938), nor Dr. Philip Drinker (Professor of Industrial Hygiene, Harvard University), in his original articles, written in collaboration with Dr. L. A. Shaw and Dr. C. F. McKhann ("The Use of a New Apparatus for the Prolonged Administration of Artificial Respiration," *J.A.M.A.* 92:1658 [May 18] 1929; *J. Clin. Investigation* 7:229-247 [June] and 8:22-46 [Dec.] 1929), made any mention whatsoever of Woillez' report and discussions (*Bull. Acad. de méd., Paris* 41:611-627 [June 20] and 754-761 [Aug. 1] 1876) and the discussions by Colin (ibid., pages 761-782 [Aug. 8]), Le Roy de Méricourt (ibid., pages 782-789), Devergie (ibid., pages 817-824), Depaul (ibid.,

9. NBC tour: (*a*) radio tour, (*b*) television tour.
10. Three different cabaret shows.
11. Special bus trip to the World's Fair.
12. World's Fair by motor speed boat, a twelve-mile ride at 35 miles per hour.
13. Admission to special events at the World's Fair.
14. Metropolitan Museum of Art.
15. Museum of Natural History.

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TENTH INTERNATIONAL CONGRESS OF MILITARY MEDICINE AND PHARMACY

Ninth Session of International Office of Medico-Military Documentation

The **Tenth International Congress of Military Medicine and Pharmacy**, which includes medicine, surgery, sanitation, pharmacy and dentistry in all their branches, held their meeting in Washington, D. C., on invitation of President Roosevelt, May 7 to 15, 1939; this for the first time in a capital outside of Europe since the inception of the organization eighteen years ago. Forty nations were scheduled to send representatives. The meeting was then transferred to New York for the **Ninth Session of the International Office of Medico-Military Documentation**, at the Waldorf-Astoria Hotel, May 17 to 20.

The International Congress of Military Medicine and Pharmacy was sponsored by King Albert and Queen Elizabeth of the Belgians, and was conceived and organized in 1921 by Col. Jules Voncken of the Belgian Military Service and Dr. William Seaman Bainbridge, Captain, Medical Director in the United States Naval Reserve. Since then it has met every two years in the various capitals of Europe. It aims at the internationalization of all branches of the healing art, with the collection, codification and standardization of all available knowledge. At each Congress six main topics are discussed. The country in which the Congress is held submits an official report on each question, as does another nation selected for its special experience in the subject under discussion. Valuable contributions on each question are also received from other countries. Toward the close of the Congress, general conclusions are drawn up and are accepted only if they have the unanimous approval of all the delegates. The Permanent Committee consists of one member from Belgium, France, Great Britain, Italy, Spain, Brazil, Switzerland, and the United the pedicular elements, using local anesthesia; he considers the anterior route the best.

Research on Pulmonary Emboli

Villaret, Justin-Besançon and Bardin (*Mém. Acad. de chir.* 64:1286 [Nov. 30] 1938), physicians and physiologists, consider the problem of postoperative pulmonary emboli and their treatment. Emboli seem to be determined more by irritation of the venous wall than by material obstacles to the circulation Death in cases of pulmonary embolism results from a reflex of pulmonary origin. Experimentally this reflex may be modified by action on the sympathetic nervous system. The important rôle of the sympathetic reflex must not lead one to forget the purely mechanical rôle of the respiratory difficulty.

There are two methods of treating these accidents, each based on a different conception: (*a*) prophylactic and (*b*) curative. The first, which aims to avoid the accidents, resorts to sympathicommimetics, or the use of ephedrine, tyramine or epinephrine series. Alkalines, papaverine or vagolithics in association seem to reenforce the action of the former. The authors recommend the combination of atropine, ephedrine and sodium bicarbonate. The curative treatment depends on the nature of the accidents caused by the embolus. fall of arterial tension, heart failure, venous congestion, peripheral collapse, apnea and anoxemia. When the respiratory rhythm is affected, oxygen associated, if necessary, with epinephrine, ephedrine, ouabain and with respiratory analeptics, is used. Atropine is resorted to in the syncopal or asphyxic states Morphine, heroin, papaverine and, if necessary, stellar ganglion anesthesia, are utilized in the anginous forms and in cases of infarcts. The experimental work emphasizes the importance of collaboration of the surgeon, physician and physiologist.

Intestinal Strangulation After Gastro-Enterostomy

Strangulation due to the passage of a loop of small intestine between the afferent loop and the spinal column after a gastro-enterostomy is described by Viannay (*Mém. Acad. de chir.* 64:1280 [Nov. 30] 1938). This complication has been reported only about fifty times. It is uncommon, and its etiology is obscure. It probably is dependent on individual anatomic or physiologic disposition. Why the nonclosure of the peritoneal slit between the prevertebral peritoneum and the afferent portion of the anastomosed loop should cause no disturbance in the vast majority of gastro-enterostomies and why in a few cases the intestine should slip through that fissure is still an unexplained problem

Biliodigestive Anastomoses: Choledochoduodenostomy

Finsterer in an exhaustive work (*Mém. Acad. de chir.* 64:1252 [Nov. 23] 1938) discusses the reciprocal value of choledochoduodenostomy and some other interventions. The danger in these anastomoses is ascending infection, which is favored by bile stasis. Choledochoduodenostomy has not met with the approval of most French and German surgeons. The reported mortality is still 40 per cent. Finsterer describes the fatal cases and shows that the proportion of fatal issues was less in 44 personally observed severe cases (13 deaths). Finsterer discusses the indications for this operation and describes the technic, which in 118 cases has resulted in only a few deaths; in the vast majority of cases he states that he has obtained a cure. This intervention is not difficult, because it is performed on a dilated common duct.

Surgical Treatment of Diabetes Mellitus

Violet discusses this subject in the *Revue de chirurgie* of Paris (76:54 [Jan.] 1938). Physiologists have classified the endocrine glands as hypoglyceming and hyperglyceming. In their experimental work the aim was to increase the production of insulin in the organism by activating the hypoglyceming glands or to secure the opposite result by reducing the action of the hyperglyceming endocrine glands. Pancreatic secretion can be considerably increased by ligation of the pancreatic ducts, but this ligation leads to serious disturbances. Mansfield has proposed isolating by constriction of half of the gland. One can activate salivation by closure of Steno's duct. The various ligature methods practiced on man have not given very convincing results. Sympathicectomy of the pancreatic arteries is difficult, and pancreatic grafts do not appear to be useful Instead of utilizing hypoglyceming measures one can lessen hyperglyceming action by utilizing the antagonism existing between the pancreas and the adrenal gland or in securing physiologic medullectomy by division of the splanchnic nerves. The thyroid also has been used. None of these measures has been employed on man. Furthermore, these glands are so complex that it is difficult to supress one without impairing the function of the others

Pulmonary Actinomycosis with Acute Abscess

Moulonguet (*Mém. Acad. de chir.* 64:1136 [Nov. 2] 1938) reports a case of acute actinomycosis located under the angle of the [illegible]ula in a man 47 years of age. Complet[illegible] was obtained after evacuation of the [illegible] treatment with iodine. The first d[illegible]

PHILADELPHIA GUILD CLINICS OF THE INTERNATIONAL COLLEGE OF SURGEONS

April 15, 1939

University Hospital

8:30 to 10 a. m. Dr. I. S. Ravdin and Staff.

Hahnemann Hospital

10:15 to 11:30 a. m. Dr. Earl B. Craig and Staff.

Temple University Hospital

11:45 a. m. to 1:15 p. m. Dr. W. Wayne Babcock and Staff.

Jewish Hospital

1:30 p. m. Luncheon.
2:00 to 3:45 p. m. Dr. Moses Behrend and Staff.

Jefferson Hospital

4:30 to 6:00 p. m. Dr. P. Brooke Bland and Staff.

7:00 p. m. Dinner, Union League. Review of clinics.

Dr. Ravdin operated on a patient with cholelithiasis by cholecystectomy with transverse incision. Ravdin drains in all cases. In a talk by Dr. Ravdin and his associates the following statements were pertinent:

No reliance is placed on liver function tests. It is not necessary to give patients tremendously high carbohydrate diets as before: 30 per cent carbohydrates and 70 per cent protein are used. The van den Bergh test is the only one used on Dr. Ravdin's service. Spinal anesthesia is the safest of all anesthetics. All other anesthetics have caused degeneration of the liver. In jaundice the greatest preventive of bleeding is vitamin K and bile salts. Hemorrhage is due to deficiency of prothrombin. The subject of heparin and thrombosis was discussed. There is no question of the efficiency of this agent in addition to operation.

Dr. Craig performed a Watkin's interposition operation for prolapse of the uterus. Before operation he used a spray of antiseptic solution consisting of merthiolate and alcohol, then painting the entire abdomen with sealskin. The second case was one of retroversion, treated by shortening of the ligaments by means of a new operation as advocated by Dr. King.

Dr. Babcock demonstrated immediate postoperative cases (subtotal gastrectomy, appendectomy, laryngectomy). He also demonstrated his glass drainage tubes, which consist of an outer shell of glass with another tube running up the center to which suction can be applied. He uses wire in almost all operations, including intestinal suture. He presented the following patients:

Woman aged 77 with carcinoma of the rectosigmoid, with metastasis to the liver. Single barrel abdominal colostomy.

Woman aged 65. Nephrectomy with transverse upper right abdominal incision.

Man aged 53. Transverse colostomy, appendicostomy.

Man aged 34 with mechanical ileus. Enterostomy.

Man aged 67 with acute purulent cholecystitis with stones. Cholecystectomy of subhepatic peritoneum, with sump drain.

Man aged 46 with portal cirrhosis with ascites, requiring abdominal paracentesis every five to eight days; relief from right peritoneal-saphenous anastomosis; repeated on left side.

The following cases were demonstrated by **Dr. Behrend:**

Gaucher's disease in a boy aged 12 years. The spleen weighed 10½ pounds (4.7 Kg.), the largest Dr. Behrend had seen in a child.

Incarcerated inguinal hernia (left) in a man aged 54

Chronic calculous cholecystitis in a woman aged 37.

Benign Tumors of the Mediastinum

To speak of mediastinal tumors from an anatomicopathologic standpoint alone is not always exact. An aortic aneurysm is a mediastinal tumor. These tumors give a variety of symptoms, depending on functional aberrations. Benign tumors are interesting and frequent. They offer a better operative prognosis. They may assume malignant aspects; in these cases it is imperative to intervene. The technic for the removal of mediastinal tumors is determined by their size and location. Each case must be studied by itself. A number of cases are reported by Jiří Diviš (*J. de chir.* 52:601 [Nov.] 1938): three of mediastinal goiter, two of tumors of the nervous system, two of connective tissue tumors, eight of dermoid cysts. All these cases presented highly interesting clinical, pathologic and operative aspects.

Trigger Thumb and Club Thumb

These two malformations were observed in a mother and her child by Poncelet (*Scalpel* 91:1563 [Nov. 26] 1938). In the mother the nodule was small and was lodged in the flexor pollicis longus and caused the trigger thumb. The tendon could easily slip back into the tendinous sheath during extension and flexion of the thumb. In the daughter the nodule was too large to slip into the sheath, and as a consequence "club thumb," which led to camptodactylia (blocked thumb), resulted.

These lesions may be the result of mechanical factors, or they may be congenital. If they develop during adult life they are usually accompanied by adhesive processes and strictures of the tendon sheath. They are often of traumatic nature, occasioned by pressure of the handle of a tool or of an iron. In Poncelet's cases the condition was hereditary, showing familial tendencies. Treatment proposed by Poncelet is partial resection of the nodule.

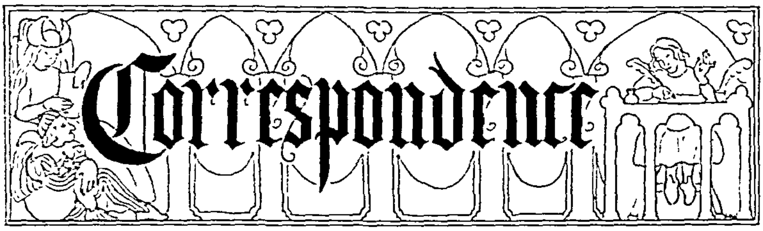
Total Extrafascial Apicolysis

Iselin and Duban (*J. de chir.* 52:748 [Dec.] 1938) describe the technic in detail and discuss the anatomic considerations that led to its adoption. They recommend regional anesthesia, to which general anesthesia may be added if necessary. According to these authors, this method is a distinct advance, owing to the efficacy of the collapse obtained and to the absence of deformity of the thorax. The danger of shock is minimized depending on the experience of the surgeon.

Abdominoperineal Resection of the Rectum

The most extensive resections give the maximum chances of recovery, and that is why the combined operation is preferred by Decker (*J. de chir.* 52:593 [Nov.] 1938). The combined operation, owing to its duration, its action on the nervous system and the extent of the mutilation, gives a high mortality. To lessen its risks it has been proposed that it be performed in two or three steps. Shock may be reduced by nitrous oxide anesthesia, but the operative difficulties are great, especially the complete dissection of the rectum and the peritonization of the pelvis. For that reason it is advisable to have two surgeons operate simultaneously, one on the abdomen, the other on the perineum.

Decker describes the technic in three steps. One of the disadvantages of his operation is that the position of the patient has to be changed three times during the course of the procedure. This operation demands great resistance on the part of the patient. If the patient's resistance is low, the perineal route should be used and an artificial anus established.



FACTS ABOUT THE "IRON LUNG"

To the Editor:—In recent months a great deal of consideration has been given to various types of apparatus for the prolonged administration of artificial respiration, and much discussion concerning mechanical devices useful for gas asphyxia, drowning and other emergencies (in cases of infants, newborn, etc.), in mines, etc., as well as paralysis of respiration in infantile paralysis, has appeared in the newspapers and medical journals. In various localities committees have been organized to raise funds for the purchase of "iron lungs" and pulmotors for use in infantile paralysis and other extreme emergencies!

It should be brought to the attention of the medical profession and the general public that, in the opinion of the leading physiologists and experts on respiration, including Yandell Henderson (1938), Haggard, Haldane and others, *the Drinker and Emerson respirators are not suited to resuscitation in emergencies,* although they are often of live-saving value in cases of *prolonged respiratory paralysis.* (See Yandell Henderson: "Adventures in Respiration: Modes of Asphyxiation and Methods of Resuscitation," Baltimore, Williams & Wilkins Company, 1938, chap. 17, p. 272).

Henderson states: "In cases of drowning, the time limit within which resusciation is possible is generally given as not more than 10 or 12 minutes!" and on page 279 he asserts: "Intratracheal insufflation of oxygen aided by an occasional compression of the thorax may help to save life in cases of respiratory failure in surgical clinics."

Henderson further believes that the PULMOTOR in practice is almost *valueless* and sometimes probably harmful (Henderson, page 270). "At best it merely supplies air with a small enrichment of oxygen."

The Special Commission on Resuscitation, under Dr. Cecil K. Drinker as Chairman, including W. B. Cannon, D. L. Edsall, L. J. Henderson, F. W. Peabody, Y. Henderson, H. W. Haggard and three others, *unanimously disapproved the pulmotor* (for resuscitation) for artificial respiration.

The Haggard and Henderson INHALATOR, *with combined carbon dioxide and oxygen treatment* (made by the Mine Safety Appliance Company), is much more useful in these emergency cases, according to the leading authorities.

It is of historical interest to note here that the original "iron lung" or the "spirophore" was first produced in 1876 by Woillez, mentioned by him in 1875, and described at the meeting of the Académie de médecine (Paris) of June 20, 1876. Woillez reported four demonstrations before the Académie de médecine in his article "Du spirophore, appareil de sauvetage pour le traitement de l'asphyxie, et principalement de l'asphyxie des noyés et des nouveau-nés" (*Bull. Acad. de méd., Paris* 41:611-627, 1876; ibid. 40:454, 1875).

This "iron lung" was strikingly similar in appearance to and identical in principle with Philip Drinker's or Emerson's iron lung. It consisted essentially of a steel cylinder enclosing the body of the patient, with a rubber collar around the neck providing an air-tight seal.

Photographs of this original iron lung or spirophore showing the instrument opened and closed with a patient in it appear in the *Bulletin de l'Académie de médecine* (Paris) (119:82-85, 1938) and in the *Lancet* (London) (1:237 [Jan. 28] 1939), with a letter by Dr. C. L. G. Pratt.

The original iron lung idea, and credit for priority in the discovery of this invention, should rightfully belong to Woillez! The Woillez spirophore or respirator is not mentioned in the monograph on "Carbon Monoxide Asphyxia" by Cecil K. Drinker (Professor of Physiology, Harvard University), under "Mechanical Devices" (Cecil K. Drinker: "Carbon Monoxide Asphyxia, New York, Oxford University Press, 1938, pp. 174-179), and no mention is made of the original Woillez invention (1876) in the monograph on "Adventures in Respiration" by Yandell Henderson.

Drinker refers to the reports by P. Drinker and L. A. Shaw (1929), T. Thunberg (1924, 1930), Drinker (1928), Eve (1932), Killick and Eve (1933), Kerridge (1934, 1936), Sir William Bragg, R. W. Paul, etc., but makes no mention whatever of the original Woillez report (1876).

It is interesting to note that Lord Nuffield, of England, has offered to donate five hundred iron lungs—one to each of the large hospitals in the

Skin Diseases and Nutrition, Including the Dermatoses of Children

By Erich Urbach, M.D., Dozent in Dermatology, University of Vienna. *Authorized English translation*, by Frederick Rehm Schmidt, A.B., M.D., Instructor of Dermatology, Northwestern University, Chicago. Cloth. Price, $7. Pp. 284, with 55 illustrations, 8 diagrams and 10 tables. Vienna: Wilhelm Maudrich, 1932.

IN this translation of Dr. Urbach's book, Dr. Schmidt has tried to place at the disposal of English-speaking physicians a textbook which includes the results of recent investigations in the dietetic management of diseases of the skin. The spirit and characteristic features of the German original have been carefully retained, providing ample opportunity to take cognizance of the author's valuable contributions to the knowledge of the biochemical status of the living skin and the results obtained by the use of precise methods of examination of the skin. The author is to be commended for the thorough presentation of a complete bibliography on the subject. The numerous typographical errors are attributable to the fact that the English translation was published in Austria. The work is amply illustrated throughout.

Directions are given to guide the physician through the difficulties of dietotherapy in the treatment of cutaneous disease. The hopes for the future, however, have not been entirely fulfilled. Seven years of trial have failed to substantiate many of the therapeutic claims made by the author.

Many experimental data are presented, but when these facts, discovered for the most part in research on animals, are applied to the treatment of human beings, one is astonished at the results. The picture of medicine dealt with by the laboratory worker is that which is displayed before his senses at a given moment, and it is one of the tacit, but nonetheless firm, presuppositions of research that experiments are the same for every individual and for all times. This is certainly not true in the case of dietotherapy in cutaneous disorders, for the constellation of such environmental factors as weather, season, nervous tension and somatic disease may completely alter the reaction of the skin to foods.

The author is to be praised for furnishing a complete record of all the experimental data pertaining to the influence of nutrition on the skin. His own painstaking analysis of the subject, to which he has added so much original work, makes this book a valuable contribution to this difficult and frequently discouraging branch of therapeutics.

CLARK W. FINNERUD.

The Surgery of Oral and Facial Diseases.

By George Van Ingen Brown, D.D.S., M.D., C.M., F.A.C.S. Fourth edition, revised. Cloth. Price, $10. Pp. 778, with 1,019 illustrations. Philadelphia: Lee & Febiger, 1938.

PLASTIC reconstructive surgery has now become an important part of surgical practice. The stress of modern life has contributed manifold disfiguring injuries by reason of automobile accidents, burns, etc. An important warning to the general practitioner reads: "Above all he must be prepared to guide his patients against the activities of those who in the guise of beauty treatment and by surgically unsound methods are doing great injury to men." Diagnostic methods and therapeutic indications are discussed in detail. The work is justly popular. It is a standard text not only for the practitioner and the general surgeon but for the specialist also. It is modern. The text has been revised, and much which is now considered obsolete is excluded, while in some portions rather ancient methods are still retained. The photography is good. Some operations lack detailed description. The work is divided into twenty-five chapters. A good section on blood transfusion is contributed by Dr. Schaeffer. Tuberculosis of the skin and oral cavity is discussed ably by Dr. H. J. Farrell, who also contributes to the section on syphilis. All in all, the volu
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Camden, N. J.

FOREIGN LETTERS

PARIS

(From Our Regular Correspondent)

Feb. 29, 1939.

Medicosurgical Documentation

About twelve years ago Dr. Pierre Astier, at the solicitation of a large number of physicians and students, decided to establish an international office of medicosurgical documentation. Since its foundation 2,000,000 abstracts and 100,000 case reports have been collected, and 300,000 letters giving information have been sent on request gratuitously

Dr. Astier in creating this institution met a wish formulated in 1926 by the Congress for the Advancement of Science. Not only can those represented consult the 1,200 reviews and the 3,000 volumes which constitute the result of this endeavor, but they can also receive on request complete documentation on any question. In France and foreign countries this opportunity is freely made use of.

Foreign colleagues visiting Paris are always welcome at the office of *Le Monde Medical*, 42 rue du Docteur Blanche, Paris XVI, and there can obtain necessary information they may desire.

Electronarcosis

Experimental studies are described by A. Dénier (*Anesth. & Analg.* 4:451 [Nov. 4] 1938). Sleep can be induced by intermittent currents of low tension (from 5 to 10 milliamperes, from 7 to 50 volts, with an intermittency of 1 on 9). In a nerve subjected to the galvanic current the anode, such as calcium, lessens the permeability of the membrane; the cathode, such as potassium increases it; and this action influences all the regions irradiated by the current. It seems that paths of polarized action are the same for the central nervous system as for the isolated nerve, and in different animals complete anesthesia can easily be obtained by the passage of a continuous current. Though narcosis is easily produced, the state of contraction is not avoided and may lead at times to an epileptic phase. This is the obstacle which has been met by all who have studied the question experimentally. Dénier substituted the high frequency current for continuous currents, and in using a frequency of 16 to 23 microseconds he obtained in experimental animals perfect anesthesia without contractions. Further experimental studies may yield beneficial results for man.

Repair of Divided Flexor Tendons of Fingers

Montant (*Mém. Acad. de chir.* 64:1344 [Dec. 14] 1938) operated on fifteen patients with divided flexor tendons of the fingers. Seven patients were operated on within six hours after the accident. The result has been good in five cases and fair in two, and in eight cases of late operation he had two very satisfactory results, three good results, one fair result and two failures. His technic calls for exposure of the divided tendons and placing a safety pin through the teguments on both the proximal and the distal end. One of the ends is thinned and placed in a V-shaped incision in the other end of the affected tendon and sutured with linen. The finger is maintained in flexion. On the fifteenth day the affected tendon is cautiously mobilized. This method is stated to reduce the duration of the treatment and functional disabilities.

Surgical Treatment of Pulmonary Carcinoma

R. Monod (*Mém. Acad. de chir.* 64:1326 [Dec. 7] 1938) reports two cases operated on. He states that carcinoma of the lung is not uncommon, but in barely 10 per cent of the cases is the diagnosis made at a period at which surgical removal offers curative possibilities. Nevertheless, the results of operation are encouraging. The pulmonary lymphatic nodes are involved only late, and the evolution of the carcinoma is, in general, slow. One does not think often enough of this condition, especially in cases of carcinoma of the smaller bronchi, which is not accompanied by very evident diagnostic signs and often is confirmed only during exploratory thoracotomy. The technic described by Monod, either for lobectomy or for pneumotomy, does not call for the tourniquet or for ligation of large pedicles. Despite the additional operative difficulties he prefers to practice, as much as possible, isolated ligature of

Everyday Surgery By Lambert Rogers, M.Sc., F.R.C.S., F.R.C.S.E., F.R.A.C.S., F.A.C.S., and A. L. d'Abreu, M.B., Ch.M., F.R.C.S. Price, $4.75. Pp 292 with 161 illustrations. Baltimore: William Wood & Company, 1938.

THE authors here have endeavored to present what they believe is best in modern surgery as applied to everyday practice. Unusual features have been omitted and the practical stressed. Prof G. Grey Turner contributes an excellent introduction. He well points out that in this work many will find a useful guide in emergencies or as a remembrance in time of stress. The work, while small, is replete with good material. It will prove of exceptional value to student, intern, general practitioner and general surgeon alike. The authors emphasize the important factors in common surgery in the treatment of emergency, shock, hemorrhages and the handling of surgical diseases of the hands, veins, rectum, appendix, gallbladder, genito-urinary system, breast, thyroid, bones, joints and nervous system. The chapter on fractures and dislocations is concise and to the point. There are 161 clear line drawings illustrating the surgical points. There are some minor mistakes, which will undoubtedly be rectified in later editions. Important surgical guideposts are stressed. The small volume is extremely practical. The section on hand infections is allotted too little space, but it contains much worth-while information in the brief paragraphs. It is refreshing to see the general surgeon's attention called to the generous use of the stethoscope, especially in abdominal auscultation. This reviewer cannot agree with the statement that thromboangeitis obliterans is almost exclusively restricted to the male sex. The paragraphs on tendon sheath infections are excellent. On page 58 it might have been well to include Perthes' test. On page 60 only ligation is recommended in the operation for varicose veins. This would not seem to be sufficient. The vein should be divided and injected high up. On page 76, in determining viability of the bowel the presence or absence of peristalsis and pulsation of the mesenteric vessels should be stressed. The statement that "every hernia requires treatment" should be augmented by the statement that direct hernia in most cases constitutes an exception. On page 81 the statement is made that peristalsis must be inhibited by withholding food and by the administration of morphia. In the light of recent studies, morphia is shown not to affect peristalsis. The admonitions on pages 83 and 84 as related to complications for acute appendicitis are excellent. The discussion on gastro-enterostomy on page 111 is well handled. Stanischeff's gastro-enteromia anterior obliqua would fit in here nicely. The statement on page 112 that the anastomosis of the esophagus to the duodenum after total gastrectomy has been performed "without difficulty" is refreshing and bespeaks the great surgical skill of the authors. On page 177, where the open ether method is recommended in Ludwig's angina, if a skilled anesthetist cannot be obtained intravenous anesthesia may be recommended.

D'Abreu has done an excellent job of illustrating this worth-while work. This reviewer predicts a warm response by the profession to this splendid work, and it is hoped it will appear in many editions.

THOREK

Pye's Surgical Handicraft. Edited by Hamilton Bailey, F.R.C.S. Eleventh edition. Price, 21 shillings. Pp 512, with illustrations. Bristol: John Wright & Sons, 1939.

ELEVEN editions for any work is a compliment and recognition to be proud of. Hamilton Bailey, who has been editing this classic in the last decade, became very well known on the North American Continent through his numerous fine contributions to surgical literature. His editorship of this noteworthy work guarantees authoritative guidance. Multiple authorship, this reviewer feels, is in a measure a disadvantage; this instance offers an exception. The work is very thorough and of immense value to medical students, general practitioners and all who are entrusted with the pre- and postoperative care of patients. Surgical nurses may well profit from perusal of the work. The illustrations are excellent and bear the characteristic thoroughness which embellishes all of Hamilton Bailey's contributions to surgical literature. The various contributions to complete this splendid work are authoritative. The index is comprehensive. The book should be in the library of every hospital, general practitioner and nursing home.

T.

Anatomie chirurgicale du crâne et de l'encéphale. By Charles Clavel and Michel Latarjet. Price, 200 francs. Pp 200, with 151 illustrations. Paris: Gaston Doin & Cie, 1938.

THIS work deals with the surgical anatomy of the skull and brain. It is thorough and of great aid to neurosurgeons and those gen-
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atic tissue are found reported in the literature; his includes partial resections and biopsy exciions. This intervention necessitates wide and nultiple incisions and entails the risks of air emolism or of profuse hemorrhage. It is made in epatic tissue the friability of which is well nown.

Jasieński's patient was 33 years old. She sufered uncontrollable pain in the right hypochonlrium. At the time of laparotomy there was ound a circumscribed tumor of the liver, thought o be beginning carcinoma, but histologic examnation showed that it was a syphilitic gumma. Excision of the mass was made. The liver edges vere reunited by suture. Recovery was uneventul.

This diagnostic error is not uncommon. Thole n 1913 collected 29 cases. Several authors beieve that syphilitic gummas of the liver call for he knife if their presence entails serious disurbances. In the present case the therapeutic est for syphilis was not made.

Victor Pauchet's Contributions

The contributions of Victor Pauchet to the rogress of surgery of the digestive tube during he last twenty-five years is discussed by Larlennois (*Rev. de chir., Paris* 57:469 [July] 1938). Not only did Pauchet distinguish himself in this ield, but he had also displayed manifold talents, uch as activities in the fields of invention, teachng, etc. He was not only a great surgeon but also a great investigator and a great teacher of urgery. He was an acute observer and meticuously self-disciplined. He paid much attention o details of technic and of instrumentation. As a surgeon he was noted for painstaking exactiude, which no doubt contributed to his outstandng success. He insisted that anesthesia, operaive material, postoperative care, each was an ndispensable element for success. Surgery owes im much.

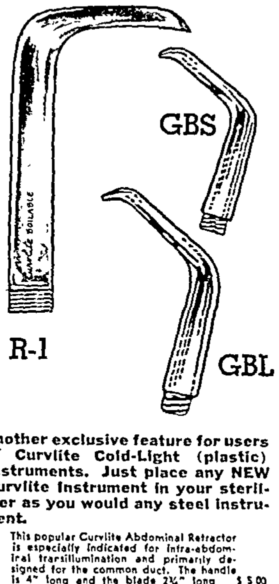
Tropical Tetanus

In the French colonies, in 1934, there were 586 cases of tetanus, with a mortality ranging rom 20 to 70 per cent. Dejou (*Rev. de chir., Paris* 57:582 [Oct.] 1938) reports nine personally observed cases of tropical tetanus. Serotherapy, ometimes in conjunction with intraspinal injecions of magnesium sulfate, yielded remarkable results as to sedation of the attacks and the good effects on contractures. Magnesium sulfate n these cases has a sedative action on the muscles analogous to that of chloral or hot baths, but its action is more thorough and more lasting. Dejou notes that the virulence in these cases is not the ame in all geographic regions. The mortality varies also according to treatment and according o promptness of treatment

Les rétrécissements non cancéreux de l'œsophage terminal. By Paul J. Botreau-Roussel. Pp 130, with 20 illustrations. Paris Librairie Louis Arnette, 1938.

THIS work on nonmalignant strictures of the terminal portion of the esophagus is dedicated by the author to his chief Dr. Pérard, surgeon to the Hopital Colombiani in Casablanca. It opens with a historical introduction, which is followed by a description of the frequency, geographic distribution and circumstances under which strictures of the esophagus are observed, to be followed by excellent chapters on the radiologic examination, esophagoscopy, evolution, complications, clinical varieties, diagnosis, pathologic anatomy, pathogenesis and treatment of the disease The latter is augmented by a number of personal observations, and the work closes with conclusions in which the author stresses that nonmalignant strictures of the lower portion of the esophagus, which have in days gone by been considered rare, are, as a matter of fact, relatively frequent They may be readily diagnosed by radiologic examination, and the well trained surgeon should be able to remedy the condition surgically. While the pathogenesis of the disease is still not well understood and while it may occur as congenital or acquired lesions, the author deplores such terms as mega-esophagus, cardiospasm, phrenospasm and esophagospasm. The reason he cites is that that there is usually a correlation of these spasmodic conditions, with strictures So-called simple spasms are, on careful examination, found to have an underlying etiologic factor. The lesions found at the inferior level of the esophagus do not always appear alike. Patients who do not improve under simple dilation should be submitted to an exploratory laparotomy The physiology of the lower portion of the esophagus is ably discussed, particularly from the radiologic point of view, with special stress on the differences between such images and those described by Lelong and Aimé. Proper treatment in these cases gives excellent results. The author discusses the proper position of the patient for operation He favors Heller's procedure.

This book should be read and will prove of real value to all interested in diseases of the esophagus. The subject matter is well handled, ably presented and is worth while. A thorough bibliography and subject index complete the work.



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Obituaries

JAMES RUTHERFORD MORISON

James Rutherford Morison, M.B., LL.D. (Edin.), D.C.L. (Durh.), F.R.C.S., died at Newcastle-on-Tyne, January 10, aged 86 years. He was educated in medicine at Birmingham and in Edinburgh. He began practice in Hartlepool, where he became physician to the hospital. He studied for a time under Billroth in Vienna. After fifteen years of general practice he moved to Newcastle, where he was assistant surgeon to the Royal Infirmary and, from 1897 to 1913, full surgeon.

Morison had an extensive surgical practice and was one of the earliest surgeons to limit himself to consultation work and to running private hospitals. Dene House and Gresham House were two institutions with which he was connected. There were few fields of surgery in which he was not active. His name is associated with the operation of omentopexy for the radical cure of ascites, and he was one of the first to advocate treating a fractured patella by open operation and catgut suture. He is perhaps best known for his pioneer work in the surgery of carcinoma. He contributed much of value to surgical practice.

In his later years he became surgeon to the Sanderson Home for Crippled Children, where he did much orthopedic work. He was consulting surgeon to the Dental Hospital, and, after the war, to the Pensions Hospital, and was instrumental in building up a modern surgical clinic in the war hospital at Newcastle. During the war, in search for an emergency antiseptic, he combined the paste of bismuth, iodoform and paraffin, which was widely used.

Morison was a member of the British Medical Association. For a long period he edited the transactions of the Northumberland and Durham Medical Society. His writings include two volumes of collected reports entitled "Surgical Contributions," his work "Introduction to Surgery" and the widely known "Abdominal and Pelvic Surgery for Practitioners." For years he was examiner for the University of Durham and for the Universities of Liverpool and Birmingham.

In Morison's death surgery loses one of its great pioneers.

———o———

Dr. Antoine Béclère, honorary physician at the hospitals, of Paris, died on February 24, 1939. He was born in 1856 and graduated in 1882. He dedicated his studies first to radiology, in which he became the pioneer in France. He foresaw the clinical and therapeutic possibilities of this new science and became the head of a school of writing and an illustrious scientist, leaving extensive researches on fibromas of the uterus, adenomas of the hypophysis and seminomas. His last days were devoted to research.

—o—

Prof. Serafino Belfanti died in Milan on March 5, 1939. He was born in 1860 at Castelletto Ticino (Novara), was a pupil of the Medical Clinic of Turin, and in 1894 became an assistant in bacteriology. The following year he founded the Milanese Institute of Serotherapy, which became an important center for the study and preparation of biological products. He was named Senator of the Kingdom in 1934, and Chevalier of the Crown in 1936. He took part in the scientific work of Italy, added important contributions to the study of bacteriology and immunology and was accorded many distinctions in educational and medical fields.

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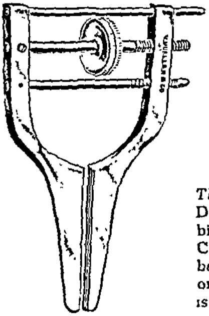

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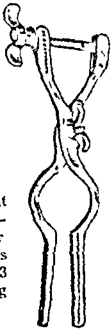

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The Treatment of Fractures. By Charles Locke Scudder, A.B., Ph.B., M.D., F.A.C.S., Consulting Surgeon to the Massachusetts General Hospital. Eleventh edition, revised. Price, $12 net. Pp. 1209, with 1,717 illustrations. Philadelphia: W. B. Saunders Company, 1938.

THE eleventh edition of Scudder's "The Treatment of Fractures" is a thoroughly revised, modern, practical volume which should appeal to the specialist or general practitioner who is confronted with a fracture problem. Nineteen contributors have written special chapters on various phases of fractures and allied disorders. The book includes such important subjects as healing of fractures in health and disease, birth fractures, epiphysial injuries, pathologic fractures, and anesthesia. The subject matter is modern down to the latest method of treating fractures of the neck of the femur and a discussion of the significance of injuries to the intervertebral disks.

The book is clearly written, easily understandable and well illustrated. The practical aspects of fracture technic, such as emergency treatment, application of plaster of paris, types of immobilization, fixation, surgery and after-care are handled well. Simple procedures are not made to appear complicated nor are complicated problems made to seem easy. Sound surgical judgment based on a large fracture experience is evident in the author's discussion.

Dr. Scudder has obviously evaluated the methods advocated with functional end-results as his guiding standard. This volume is a worthy contribution to the fracture library and is recommended as a dependable reference for sound clinical management of fracture problems.

JEROME G. FINDER.

Cancer: Its Diagnosis and Treatment. By Max Cutler, M.D.; Franz Buschke, M.D., and Simeon T. Cantril, M.D. Price, $10 net. Pp 757, with 346 illustrations. Philadelphia: W. B. Saunders Company, 1938.

THE preface of this worth-while volume states: "The special purpose of this work is to make accessible to the reader a clinical evaluation of the pertinent facts of the diagnosis, prognosis and treatment of cancer as gleaned from the world literature and reviewed in the light of our own experience." The statements contained in the preceding have been well lived up to by the authors. The writers refer the reader interested in specialized forms of cancer, such as that of the nervous system, to works contributed by others—notably Harvey Cushing—while the profound student of histogenesis and detailed morphology of neoplastic transformations is referred to the work of Ewing. The authors focus attention on the importance of early diagnosis of malignancy which is made or should be made by the general practitioner. It is to him that the work will greatly appeal. The text is easily readable. It lucidly describes malignancies as affecting various portions of the body; diagnostic points are stressed, and therapeutic indications outlined. It is not a unilateral text. The authors garner what they consider best from every branch of endeavor in treating malignancy. The illustrations are well executed, the printing and binding admirable, and the bibliography, comprising twenty-four pages, is exhaustive and furnishes an excellent guide. The authors' index and complete subject index enhance the value of the work considerably. All in all, the authors are to be congratulated for a fine contribution to contemporary literature on malignancies.

M.

The Surgical Treatment of Hand and Forearm Infections. By A. C. J. Brickel, A.B., M.D. Price, $7.50. Pp. 300, with 166 illustrations and 35 plates, 10 in color. St. Louis: C. V. Mosby Company, 1939.

LET it be said at the outset that this work is a worthy successor to the late Allen B. Kanavel's work on "Hand Infections." Brickel's contribution is monumental. The ordinary texts on infections of the hand are confronted with difficulties of lucid presentation of the subject. This has been rendered comprehensively understandable by the author by presenting a plan of superficial and deep dissections accompanied by instructive plates, and thus a complex subject is made more readily digestible. The introduction of the term "palmar foyer" is appropriate and to the point. The study by cross-sections through the palm of the hand is exceptionally well presented. This all important subject of hand infections, which has aroused much interest in modern times, has received a new impetus and has aroused further interest by the excellent contribution of Brickel. The spread of infections is ably described, and the treatment correlated in a masterly manner, based on anatomic studies. The color plates are beautifully rendered from both the artistic and the didactic point of view. This reviewer predicts a spontaneous and continuous success of this very well worth-while contribution to contemporary surgical literature.

M. T.

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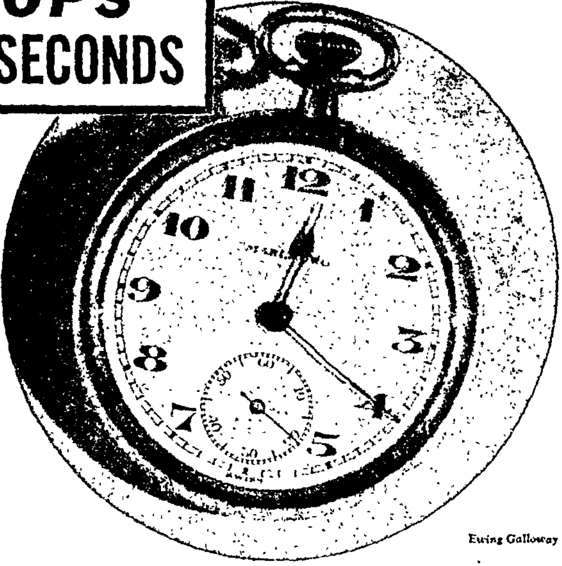

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the fourth the isthmus of the brain, concluding with a description of the cerebrum. There are 151 illustrations, 10 of which are in color. The text is in large type, instructive and up to date. The drawings are not diagrammatic but are made from specimens from the laboratory and are supplemented by numerous x-ray studies made after the blood vessels have been injected, therefore adding much in the study of the topography of the ventricles, the cisterns and intracranial blood vessels. Not only neurosurgeons, but also general surgeons, as well as otolaryngologists and medical men interested in intracranial pathology, will gain much from the perusal of this work.

R.

The Essentials of Modern Surgery. Edited by R. M. Handfield-Jones, M.C., M.S., F.R.C.S., and A. E. Porritt, M.A., M.Ch., F.R.C.S. Price, $9. Pp. 1,142, with 501 illustrations. Baltimore: William Wood & Company, 1938.

THE editorial board of this excellent work is composed of fifteen leading English clinicians. The printing and illustrations, as well as the photography, are admirable. It is obvious that in the last decade there has been a tendency to overspecialization. In this work the specialties are ably handled. An excellent chapter on hernia is contributed by Rupert Vaughan Hudson, which is exceptionally well illustrated. The essential features of the work are represented by its didactic method of stressing the fundamentals of anatomy, physiology and pathology as particularly related to surgery. After all, these are the keystones on which good surgery is built. The authors state: "It is only by building on sound foundations that men can be taught to think for themselves and to avoid falling into the deplorable habit of countless laboratory investigations without making some small effort to arrive at the diagnosis on clinical grounds." This concise work guides the student and the serious-minded practitioner into wholesome avenues of knowledge. The forty-seven chapters are brim full of up-to-date information which every surgeon should possess. Surgical technic is not stressed or described fully. The work is not intended as a text on surgical technic. It primarily deals in the essentials of modern surgery, in which undertaking the authors have notably succeeded. The illustrations are well chosen and instructive and the index thorough.

X

Behandlung der offenen Brüche der langen Röhrenknochen mit Einschluss der Behandlungsergebnisse. By Dr. Walter Ehalt. Price, 40 marks. Pp. 363, with 604 illustrations and 95 charts. Vienna: Wilhelm Maudrich, 1938.

THIS book is a complete and masterful presentation of the treatment of compound fractures. The author recommends careful and thorough débridement of all dead and devitalized tissues, primary suture of the wound, drainage through a separate incision, and complete, undisturbed immobilization of the fracture until bony union has occurred. He deplores the use of all foreign material; even catgut ligatures of bleeding vessels are avoided. No chemical antiseptics are employed in the wound, and even the prophylactic use of tetanus and gas gangrene antitoxin has not been necessary. A detailed and critical analysis of the author's cases is presented, and the excellent results obtained offer a strong argument in favor of the method of treatment recommended.

DANIEL H. LEVINTHAL.

English, German, French, Italian and Spanish Medical Vocabulary and Phrases. By Joseph S. F. Marie. Price, $3. Pp. 358. Philadelphia: P. Blakiston's Son & Co., Inc., 1939.

CHEVALIER JACKSON'S statement in the foreword, "All my medical life I have wanted just such a book as this. It makes me sad to think of the thousands of weary hours it would have saved me, hours spent in handling a clumsy stack of dictionaries of different languages," is at once subscribed to by all who have the opportunity to see this excellent contribution to contemporary medical literature. One wonders why this work has not been produced sooner. True, there are medical dictionaries in various languages, but they certainly do not serve their purpose as thoroughly, as succinctly, as does this present volume by Joseph S. F. Marie.

While the volume is of incalculable value to every medical man in every specialty, it is indispensable to those who have only a superficial knowledge of languages, who are eager to translate, properly, articles written in foreign languages and to all progressive physicians. The format is handy, the printing excellent, the binding attractive. This handy volume should be in the library of every hospital, teaching institution, general practitioner and progressive medical man.

M. T.

The Journal of the International College of Surgeons

PUBLISHED BIMONTHLY BY
THE UNITED STATES CHAPTER OF THE INTERNATIONAL COLLEGE OF SURGEONS

AUGUST 1939

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THE Journal of the International College of Surgeons is published for the time being under the auspices of the United States Chapter of the International College of Surgeons, for the advancement of surgery and as a medium of publication for reports of research, clinical observations and experimental work in surgery, as well as to acquaint members of the International College of Surgeons throughout the world of its activities.

Ownership: The Journal of the International College of Surgeons is a nonprofit publication owned and published by the United States Chapter.

Material: Scientific articles and communications on matters of surgical and related interests are invited. These must be submitted to the Editorial Board, which reserves the right to reject any material deemed unsatisfactory. All manuscripts are subject to editorial modification.

Scientific Papers: The publication of scientific papers in the Journal is not limited to the Members and Fellows. Any surgeon may submit original contributions, which will be considered by the Editorial Board for acceptance. Thus, while the Journal is the official organ of the International College of Surgeons, it is also an open forum for the expression of contemporary surgical advancement, thought and research. There is no discrimination as to those who may submit original papers; it is the scientific value of the contribution that determines its acceptability for publication.

Article I, Section V, of the Constitution of the College reads:

"It is strictly non-sectarian and non-political; it is decidedly against arbitrary restriction of merit and is free from prejudices, and will recognize the SURGEON and his accomplishments, and will not be influenced by his financial, political and other irrelevant status."

Exclusive Publication: Original articles are accepted with the understanding that they are contributed only to the Journal of the International College of Surgeons.

Manuscripts: All correspondence relating to the submission, acceptance, rejection or publication of manuscripts, as well as books and monographs for review, programs and reports of proceedings of societies and general communications should be addressed to the Editorial Office, 850 West Irving Park Boulevard, Chicago, Ill., U. S. A. Except where special arrangements are made, return first-class postage must accompany manuscripts. Otherwise this office cannot be held responsible for the material sent.

All manuscripts must be typed, double-spaced, on one side of standard manuscript sheets; the left margin should be 1½ inches in width to permit proper editing. Manuscripts should bear the address of the author. No manuscript will be accepted for publication without consideration by the Editor-in-Chief and the approval of the Editorial Board.

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MEDICAL CORPS, UNITED STATES NAVY

Surgeon General of the United States Navy
WASHINGTON, D. C.

THE Naval Medical Service is naturally keenly interested in finding a proper form of anesthesia which will meet all the peculiar needs of that service. It is an established fact that naval surgery is seldom extensive at the scene of action. In fact, in all naval engagements there is little opportunity to do more than give first aid to the wounded. When the engagement lessens, the wounded are collected and moved to the battle dressing stations, where operative procedures may be carried out. Analgesic agents are freely administered in this phase of activity. As is well known, there is no more efficacious drug than morphine or some of its derivatives. Anesthesia then is delayed until operative measures can be instituted and performed in the safety of the operating room or dressing station.

The medical division of a ship must be prepared to render all possible aid to the wounded. It must be prepared in all the practical procedures of induction anesthesia and analgesia, so that life-saving operations may be speedily managed and shock-producing wounds may be quickly and mercifully handled. There is no greater stimulus to fighting morale than the reassuring knowledge that quick and efficient analgesic agents are available for the control of pain. The fighting courage of brave men will weaken and finally be exhausted by the unbridled strength of pain. The sight of shipmates stricken and in agony from wounds will destroy the morale of any gun crew.

In the preceding paragraph I have discussed the problems met in battle conditions. We have, of course, in our naval hospitals the same problems in anesthesia that confront any civilian institution. Consequently, our anesthesia needs are similar and need no further comment.

The second class of anesthesia service takes in the ship on detached duty in peacetime. Here is a distinct and separate problem, one where the ship's surgeon may find himself in the position of anesthetist. Therefore we must find a comfortable and efficient anesthesia, which will approach as near as possible one hundred per cent safety.

In the following paragraphs I shall discuss briefly the advantages and disadvantages of various agents and shall attempt to draw a conclusion as to which of these best meets our need.

ANESTHETIC AGENTS

All surgeons are familiar with the general acclaim over the great conquest of surgical pain when ether and chloroform vied with each other for first place in popularity. In those early days little attention was paid to the morbidity or deaths due to anesthesia. Chloroform, pleasant and quick in action, was a great European favorite and at one time bade fair to replace ether in America. However, when close attention was given to mortality from anesthesia, ether gained a rapid ascendency, and chloroform lost greatly in favor, especially when it was proved that there was a great deal of secondary visceral damage particularly to

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* Read at the International Scientific Assembly of the International N
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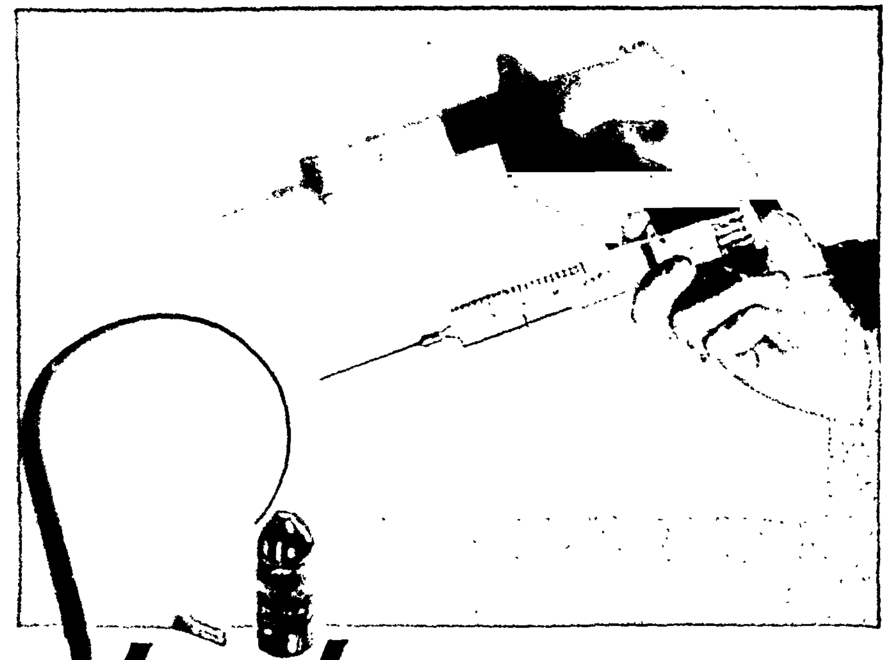

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of anesthesia. The use of helium gas combined with nitrous oxide and oxygen is being given a thorough investigation and seems to have a definite place in cases in which there are difficult or obstructive respiratory conditions. It is well known that helium has a place in the therapy of bronchial asthma. Helium is an inert and extremely light gas which diffuses rapidly through the bronchioles and alveoli and allows a higher oxygen concentration in the tissues.

The field of spinal and local anesthesia will now be considered. On shipboard these two methods are especially adaptable. The surgeon anesthetist must be thoroughly trained in regional anesthesia, which includes all lesions of the head, neck, body and extremities. Complete field block of the scalp can be accomplished to take in all superficial wounds of the scalp, and craniotomy can also be performed by this method. The pericranium and periosteum are not injected, as the bones of the skull are insensitive and may be drilled, sawed or cut without painful sensation. The paths of all regional nerves of the head can be blocked. Wounds of the face and neck are easily blocked by similar methods across the paths of the regional nerves. Practically all surgical intervention on the thorax can be accomplished by the combination of paravertebral and intercostal block and subdermal infiltration. The lungs and heart are not sensitive, and the parietal pleura and pericardium, though sensitive to traction, may be blocked by direct infiltration of the exposed pleura or pericardium around the operative zone.

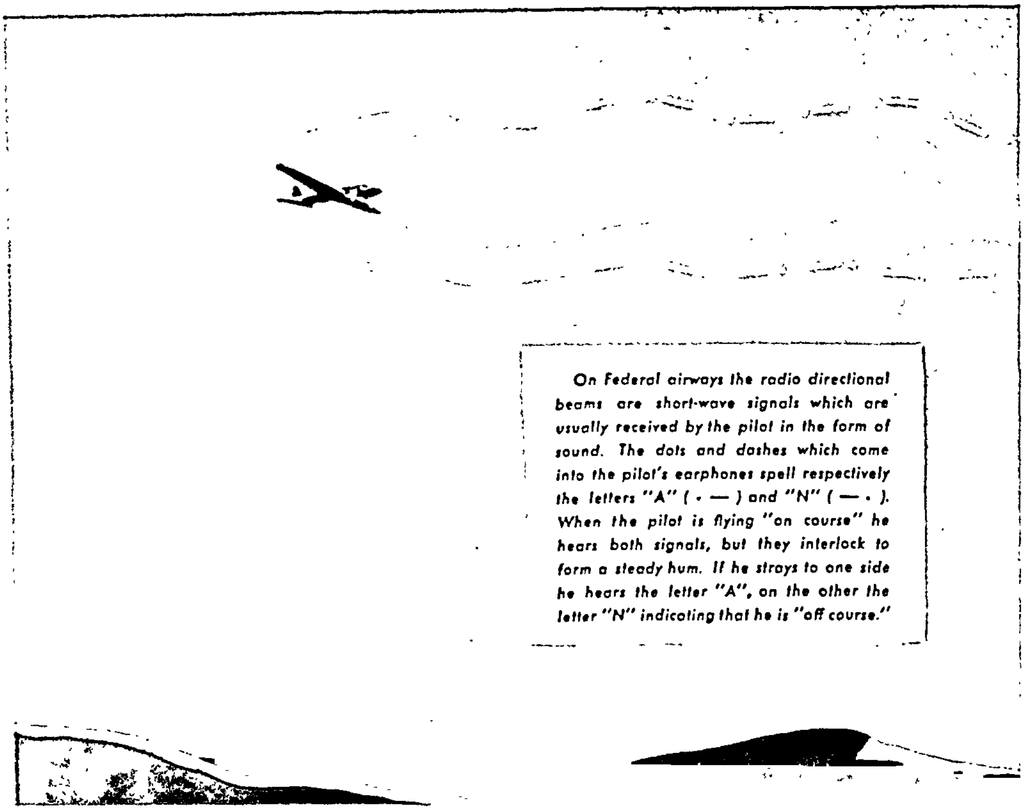
For major wounds below the diaphragm, spinal anesthesia is satisfactory when shock and hemorrhage are not serious factors. Combination of abdominal field block and low light spinal analgesia will permit full abdominal exploration. Supported by concurrent intravenous infusion of dextrose, sodium chloride or blood, this procedure is very safe. Penetrating and major upper abdominal wounds may require supplemental inhalation anesthesia, with regional block of the portion of the upper abdomen. Abdominal field block combined with anterior splanchnic anesthesia, by direct subperitoneal infiltration made along the paths of regional sympathetic nerves, will give adequate surgical anesthesia, with remarkable relaxation and quietness of the abdomen and the greatest safety.

For all types of fractures and dislocations, local anesthesia is adaptable, extremely satisfactory, and safe in all devices. It is attained with surprising ease by regional blocking of sympathetic nerves and intramuscular injection of procaine into the bellies of the involved muscles. The "fracture hematoma" at the site of fracture is not entered. Analgesia and muscular relaxation are obtained within five to ten minutes and persist for two or four hours after reduction. For major fractures and dislocations of the upper extremity, brachial anesthesia is excellent for close and open reductions. Low spinal anesthesia is the method of choice for fractures and dislocations of the pelvis or femur and major tibial fractures.

Cases of traumatic wounds involving severed tendons and nerves are excellent cases for the use of local anesthesia. Identification of tendons, nerves and important structures is made easier with this method, and the extent of functional recovery may be directly noted.

For all the purposes just stated, local infiltration and injections of a 0.5 per cent solution of procaine combined with epinephrine are employed.

In spinal anesthesia, procaine, never exceeding 1 mg. for each pound of body weight, is used, and should metycaine be the drug, 10 to 25 per cent should be deducted from the dose of procaine.



On Federal airways the radio directional beams are short-wave signals which are usually received by the pilot in the form of sound. The dots and dashes which come into the pilot's earphones spell respectively the letters "A" (· —) and "N" (— ·). When the pilot is flying "on course" he hears both signals, but they interlock to form a steady hum. If he strays to one side he hears the letter "A", on the other the letter "N" indicating that he is "off course."

TO STEER A COMFORTABLE POSTOPERATIVE COURSE

For many a surgical patient the postoperative course has been free from distention and even minor gas pains because of the widespread interest in the use of Prostigmin Methylsulfate* 1:4000 as a routine preventive measure. Harger and Wilkey, in their conclusions from a study of 175 cases said, "We have found in Prostigmin a very satisfactory method of controlling postoperative distention. No signs of drug intoxication were seen, nor were by-effects on the eye observed. There was no obvious evidence of hyperperistalsis and no complaints of excessive cramps." (Management of Postoperative Distention and Ileus, *J.A.M.A.*, 1938, 110:1165). Levis and Axelman concluded, after a series of 88 cases, that Prostigmin Methylsulfate has proved to be the most effective preventive of postoperative intestinal atony. They observed no by-effects, such as might be expected from the use of effective doses of eserine. (American Journal of Surgery, 1936, 32:308). We suggest 1 ampul every 2 hours for 6 doses, giving the first injection immediately after the operation. HOFFMANN-LA ROCHE, Inc., NUTLEY, N. J.

* Prostigmin Methylsulfate is the dimethylcarbamic ester of 3-hydroxy phenyl-trimethyl-ammonium methylsulfate.

PROSTIGMIN METHYLSULFATE

SUMARIO

La anestésia en el servicio naval de los Estados Unidos

El anestésico selecto para los barcos durante tiempo de guerra es procaína para las anestésias locales y cloroformo para las anestésias por inhalación. Durante el tiempo de paz la selección es procaína. En los acorazados ó cruceros, anhidrido nitróso combinado con oxígeno es muy usado; pero no es recomendado en bàrcos mas pequeños. El uso de analgésia, combinada con local y anestésia spinal, es recomendada como el metodo á escoger en cirugía naval.

RIASSUNTO

Anestesia nel servizio navale degli Stati Uniti

L'anestetico di scelta per navi in tempo di guerra è procaina per anestesia locale e cloroform per anestesia d'inhalazione. In tempo di pace l'anestetico di scelta è procaina. On navi di battaglia ed incrociatorin N_2O combinato con ossigeno è molto utile ma non applicabile nelle navi di minore volume. L'uso di analgesici combinato con anestesia locale o spinale è raccomandato come metodo di scelta nella chirurgia navale.

NATIONAL ASSEMBLY

THE NATIONAL ASSEMBLY OF THE UNITED STATES CHAPTER OF THE INTERNATIONAL COLLEGE OF SURGEONS WILL BE HELD ON FEB. 12 AND 13, 1940, AT VENICE, FLORIDA, UNDER THE DIRECTION OF DR. FRED H. ALBEE, INTERNATIONAL PRESIDENT-ELECT, AND THE PRESIDENCY OF DR. FREDERICK M. DOUGLASS, PRESIDENT OF THE UNITED STATES CHAPTER AND CHAIRMAN OF THE PROGRAM COMMITTEE.

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the "typical white bile" is a well balanced dialysate, conforming in its general composition and mineral characteristics to natural balanced dialysates and products obtained by dialysis of the plasma through membranes (goldbeaters' skin, collodion bags, etc.).

Although the dialytic composition is identical, these fluids may present various aspects: Persistent epithelial islands may produce a mucus which clouds and thickens the retained liquid; or when some communication with the liver is maintained, the biliary pigment stains the dialysate, giving it a greenish color.

As a result, three types may be distinguished: first, pure well balanced dialysates from the biliary ducts, which furnish the typical or pure white bile; second, well balanced dialysates contaminated with mucin of epithelial origin (white bile contaminated with mucus cells), and, third, stained well balanced dialysates (pseudobiliary fluids).

Clinical, histologic and chemical data are in agreement with this classification. Clinical experience shows that in patients operated upon there has always been found a complete mechanical obstruction to the passage of bile. The gallbladder has invariably proved in such cases to be dilated, wrinkled, leathery or dried.

Tissue examination, in turn, offers corroboratory data: In the purest types of white bile the lining of the gallbladder is completely lacking or only a few islands are left; the cells are of the pavement type; the submucosa and the subserous tissue become fattened and necrosed, transforming the gallbladder into a fibrous sac comparable to a collodion bag. In each case a careful investigation shows an acute, subacute or chronic inflammatory process, whether past or present. On centrifugation white bile gives in some cases a precipitate consisting of polynuclear cells. In other instances a fibrinous exudate covers the gallbladder. The presence of a leukocytic congestion and infiltration attests the inflammatory nature of the disease process in other cases.

Chemical findings also bear out the classification just given. In the pure types, the puncture fluid is clear or slightly opalescent, rarely clouded by suspended elements; its consistency is fluid, not threadlike; the specific gravity varies between 1.006 and 1.007; albumin and mucin are absent. All this agrees with the nonexistence of an open inflammatory process and with the complete, or almost complete, disappearance of the lining of the sites in question. Mineral substances recovered from ash reach a proportion of 8.50 as in the blood and humors from which they are derived. The chlorides, calculated as sodium chloride, are between 7.4 and 8 mg. per thousand cubic centimeters. The characteristic constituents of the biliary secretion (cholesterol, pigments and salts) are lacking, or only traces of them are found; the urea follows the curve of the blood urea value. Sugar is present in amounts varying from 0.8 to 0.12 mg. per liter.

In the second type the dialysate structure is not lost, but the fluid contains protein and mucin: 1 Gm. of the former and variable amounts of the latter. Biliary elements are lacking or very scarce. Chlorides are decreased, owing to the action of the colloids, according to the laws governing natural dialysates or because of the existence of a mild inflammatory process.

Greenish fluids have a different composition: they are always dialysates mixed with bile, and are called "pseudobile." The mineral elements, fixed elements, chlorides and specific gravity recall in their proportions the corresponding blood values.

Although the composition of the various types of white bile is known, its origin remains to be explained. While there is no generally accepted explanathe heart and liver. Ether was proved to be much safer. Pulmonary and gastrointestinal irritation were the only primary insults traceable to this drug, which was found to cause little or no serious secondary damage, even after prolonged anesthesia.

Nitrous oxide has been in use through all the same period as ether, but it was not employed in major operations until 1868. Since it has been combined with oxygen, it has proved a relatively safe and satisfactory anesthetic, and in the Naval Service it has been used to a great extent. It has a definite place in induction anesthesia, and when combined with local anesthesia gives one of the most useful anesthetics we now have.

Many other gases have been given a thorough trial, such as: ethylene, divinyl ether, cyclopropane, avertin and the soluble barbiturates. All these have a useful place in the field of anesthesia, they have objectionable features that have made them of little use in naval surgery.

The greatest disadvantage in the use of ethylene is its inflammable and explosive nature. Its advantage over ether is that it is more rapid in action and less unpleasant to the patient, causes no irritation of the lungs and little postoperative nausea and vomiting. Another disadvantage is that it will not produce as complete muscular relaxation as ether, and to [illegible] surgical procedure it is often [illegible] supplement ethylene with ether.

Divin[illegible] highly inflammable and also [illegible] is considered too unsafe [illegible] use.

Cycl[illegible] the same disadvantage as [illegible] ether in that it is also inflam[illegible] is capable of exploding when [illegible] in a mixture of oxygen as low as 3.8 per cent. It has a splendid reputation as a pleasant induction anesthetic and is supposed to afford greater surgical relaxation.

Avertin combined with amylene hydrate is employed as a basal anesthetic, to be supplemented by some general or local anesthetic. Given slowly as an enema in a patient's bedroom, twenty minutes before operation, it produces sleeplike unconsciousness rapidly and quickly. There is no excitement, and the preoperative apprehension is quickly dispelled. Contraindications are severe organic lesions or dysfunction of the liver or kidneys, severe cardiac disease, enteritis, ileus, tumors of the colon, lesions of the rectum, sepsis, shock and grave cachexia.

Intravenous anesthesia has been given a great deal of space in the public press, as well as in professional channels, during the past few years. The soluble barbiturates have been found to be useful in this field when short operative procedures are indicated. However, one must realize clearly that when given by intravenous injections they must be classified as noncontrollable anesthetic agents because of their nonvolatile character. They are, however, rapidly detoxicated and approach in a sense the controllable type of anesthetic agent. This is especially true when they are injected slowly by the fractional dosage method. The most popular are pentothal sodium, evipal soluble, sodium amytal and pentobarbital sodium. They should be injected intermittently and slowly, usually at the rate of 1 cc. per ten seconds until unconsciousness occurs. The average dosage is 3 cc. in thirty seconds. The injection is then stopped for thirty seconds, after which the remainder of the required dose is given intermittently. The duration of anesthesia averages from fifteen to twenty minutes. The contraindications are organic disease of the liver, inflammatory processes of the throat, sepsis and definite hypotension. Intravenous anesthesia is rapid and pleasant, with natural sleeplike unconsciousness.

A new agent has come into the field

drawn as to whether the mucosa of the gallbladder produces the secretion.

Hammarsten's patient work and, as already mentioned, also that of Peyton Rous and MacMaster, must be credited with the details of the present physiopathological knowledge of the gallbladder. One has learned about its absorbent power, demonstrated through the comparative study of the bile collected in the hepatic duct as it emerges from the liver, and that removed from the gallbladder itself. One now realizes its extremely rapid absorptive power in some cases. In one experiment, 50 cc. of bile entered the gallbladder and was reduced to less than 5 cc. in twenty-two hours. Through its mere passage through the organ the bile becomes concentrated. In one experiment, consisting of placing a cannula in the base of the organ, the bile recovered was five times smaller in volume. Inflammation reduces or impedes absorption. The mucous membrane, through its secretion of mucin, cooperates in the thickening process of the bile. Nothing like this happens in the ducts, where this material is not produced; on the contrary, their fluid secretion thins out the bile and makes it less viscous.

When a ligature is applied to the main duct and the gallbladder is excluded, a colorless fluid appears a few days later in the ducts. This is the white bile. It contains no bile pigments or salts or cholesterol, and hardly resembles bile at all. The bile secretion has been stopped by the considerable increase in pressure (300 mm. of water) within the duct system.

If the gallbladder is healthy and is not shut out, the results are completely different. The retained bile is transformed into a very thick, dark green product, which gathers in the bladder and ducts and after a few weeks assumes a tarlike consistency through the action of the biliary system. In this case there are antagonistic functions, if one wishes to put it so, as the ducts tend to render the bile more fluid and the bladder tends to thicken it. This conflict terminates with the triumph of the ducts over the bladder, the final product having but slight density.

Another type of white bile produced by a different mechanism has been mentioned. When the liver cells of a dog are injured by chloroform poisoning, a colorless, clear fluid is discharged by the cells, the true secretion being suppressed. White bile of this type may occur in man as a sequel of hepatic disease. The conclusion derived from these facts is that the gallbladder cannot retain any fluid without absorbing it. Neither can it produce white bile while it remains healthy and retains its physiologic function.

If the epithelium is injured, damaged or totally or partially destroyed, the situation changes completely. White bile from the common duct and that from the gallbladder are alike, but neither represents epithelial secretion. Injury to or disappearance of the gallbladder lining favors white bile formation. An epithelium may be injured, damaged or destroyed by physical, chemical or biologic agents, and, among the last, infection is the most prominent. Two of MacMaster's dogs, prepared through ligation of the common duct to furnish green bile, gave white bile, but in both animals infection was present. Mocquot considered empyema of the gallbladder as essential to white bile formation. Aschoff and Baemeister have asserted that gallbladder dropsy is preceded by an inflammatory condition. Kummel reached the same conclusion, and Gosset and Mestrezat have agreed in this. The almost complete absence of sugar, the decrease of bile urea in relation to blood urea, and the weak alkalinity of these fluids are chemical reasons carrying considerable weight in forcing acceptance of the presence of an infection or changes on the part of

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RESUME

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rien über ihren Ursprung werden besprochen. In diesen Fällen ist ein akuter, subakuter oder chronischer Entzündungsprozess im Gange und eine Entfernung der Gallenblase ist angezeigt.

SUMARIO

Bilis blanca

Cuando los conductos biliares estan obstruidos, un flúido es observado en la operación variando de claro á ligeramente turbio y viscoso, y verdoso en algunos casos. Esto es una diálisis sanguínea bien balanciada. Teorias con respecto á su origen se estan discutiendo. En tales casos un proceso agudo, subagudo ó crónico inflamatorio está presente, y extirpación de la vesícula biliar está indicada.

RIASSUNTO

Bile bianca

Se i condotti bileari sono otturati, all'operazione si può osservare un liquido che varia da chiaro a leggermente torbido e viscoso e verdastro in alcuni casi. Questo è un dialisato del sangue che è bene bilanciato. Teorie sulla sua origine sono indagate. In questi casi un processo infiammatorio acuto, subacuto o cronico è presente ed ablazione della cisti fellea è indicata.

* * *

APPLICATIONS FOR ASSOCIATE MEMBERSHIP, MEMBERSHIP AND FELLOWSHIP IN THE INTERNATIONAL COLLEGE OF SURGEONS MAY BE ADDRESSED TO DR. CHARLES H. ARNOLD, 908 TERMINAL BUILDING, LINCOLN, NEBRASKA. THESE WILL BE ACTED UPON IN THE REGULAR ROUTINE AS OUTLINED IN THE BY-LAWS. APPLICATIONS FOR CONSIDERATION MUST BE RECEIVED NOT LATER THAN A MONTH PRECEDING THE REGULARLY STATED ASSEMBLY MEETING

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WHITE BILE*

FRANCISCO CASTILLO NÁJERA, M.D., F.A.C.S., F.I.C.S.
Ambassador from Mexico to the United States
MEXICO CITY, MEXICO, AND WASHINGTON, D. C.

AMONG the very few surgeons who practiced gallbladder surgery in Mexico thirty years ago were Dr. Ulises Valdés, who died last year, and Dr. Gabriel M. Malda. I had the privilege of acting as assistant to both during my last years as a student, and in this capacity I helped in numerous operations on the biliary tract. After graduating, I performed a number of cholecystostomies and cholecystectomies between 1917 and 1927, and also aided the aforementioned professors in about a hundred such operations. Later, during my visits to Mexico City in 1932, 1935 and 1936, and in the past three months of this year (1939), I have observed, when not aiding, Professor Malda performing new operations, and we have often exchanged ideas on the subject of this paper.

Since we first became interested in biliary surgery, Dr. Malda and I have continued to study this subject, as our attention, as well as that of other surgeons, has been attracted by the presence, in gallbladders operated upon, of a clear fluid resembling rock-filtered water. While this appearance prevails in the majority of cases, in others the fluid is lightly turbid and viscous, and in rare instances it has a greenish color, similar to that of bile.

The investigations made in Dr. Malda's sanatorium at different times, under his direction, confirm those of the authorities cited in this paper, and bear out the views expressed further on.

COMPOSITION

The fluid mentioned, known as "white bile," exists when *an intrinsic or extrinsic object blocks the bile ducts.*

It was first thought that the storing up of bile in the biliary ducts brought about the secretion of this white bile by stimulating the epithelium. The prominent French surgeon Terrier denied such a possibility, pointing out that true secretions are originated by the activity of specialized epithelia. Chemical processes endow these secretions with a constitution very different from that of blood; in the former are present specific products which cannot be found in the latter. The mineral elements are in different proportions in a secretion than in the blood, owing to the fact that glandular action changes the respective relations of ions.

Various products of similar mineral composition are derived from the blood by purely physical mechanisms (such as exudate and transudate), as proved by the amount of chlorides and by the total ash content. These "serates" or serous fluids are characterized by a consistent amount of the chlorine anion, which is analogous, when not equal, to that of the blood.

Biliary stasis causes an interchange with the blood through the normal or damaged epithelia of the gallbladder and through the desquamated and already fibrous walls of the ducts. This dialytic phenomenon culminates in the transformation of the bladder contents, the bile being replaced by a balanced blood dialysate.

The blood, through the various mechanisms mentioned, may form serates, balanced dialysates and true secretions. Chemical examination shows that

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* Read at the International Scientific Assembly of the International College of Surgeons, New York, May 23, 1939.

that the specific cells of the endometrium are in a constant state of flux during the whole of the sexual life, and that they are regulated by the ovarian hormones. It is known that every function of the body is under control of something else, and that controlling factor is usually a hormone; and that these hormones are subject to an increased or a depressed output, as the result of a legion of causes which operate from within and without; and one must understand that all gland aberration is in the nature of an accommodation to a change in environment, and whether that change is in the remote environment or in the immediate internal milieu surrounding the cell is a matter of degree and not specificity. Excessive action and deficient action of the glands which control function are the two specific ways in which they modify their influence. The uterine wall, as distinguished from the endometrium, has three component tissues. They are muscle, connective tissue (including elastic tissue) and endometrial stroma cells. It is impossible to state at the present how much and to what depth the stroma cells of the endometrium normally pervade the uterine parietes. But in a vast majority of cases in the sexual age there is a diffuse ramification permeating between the muscle bundles into finer and finer branches, as one recedes from the basal layer of the endometrium. Under abnormal endocrine conditions the specific endometrial elements pervade the uterine wall to a definitely pathologic degree, and this pervasion may be, and usually is, composed of both stroma and glandular elements, or (and this is the chief interest of this paper) it may be composed of stroma cells only. In this respect it has been indistinguishable from sarcoma of the uterus. When both endometrial elements invade the uterine wall, these may function simultaneously and similarly to the normally situated endometrium, and thus in this condition there is a distinguishing gross feature. But the stromatous invasions never respond to the menstrual cyclic changes, so that in this feature also their resemblance to sarcoma is enhanced.

STROMATOUS INVASIONS

Stromatous invasions of the uterine wall may be diffuse and cause no loss of uterine symmetry, or they may be local, giving rise to a definite tumor, causing loss of symmetry and on bimanual examination closely simulating fibroma, for which they are almost invariably mistaken. The invasion extends along the lymphatic channels, between the muscle bundles of the uterine wall; and even in their most rapid forms of growth, though they invade the lymphatic and venous channels, they do not destroy the other tissues but merely crowd them aside. The lymphatic linings are mostly intact, even though the lumen is filled with an invading growth. The same applies to the venous vessels, though venous invasion is much less common than lymphatic invasion. When the endometrial growth progresses along a vessel, whether lymphatic or venous, it usually carries its own blood supply. In the diffuse types (endometriosis) the growth may pervade the whole depth of the uterus and invade the lymphatics of the broad ligament, and by direct continuity extend beyond the pelvic limits. The new growth may give the lymphatics of the broad ligaments the appearance of thick ropes extending to the pelvic wall, and on opening the invaded channels one can roll the growth out as a worm from its bed. The type of component cell is that of a small round-cell sarcoma. But the blood vessels are the normal thick-walled vessels of the invaded tissue, or thin-walled vessels as
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tion, opinions may be advanced which will approximate the truth.

ORIGIN

The first experiments were made by Mocquot on dogs and guinea-pigs; Quénu experimented on man, Aschoff and Bacmeister on dogs, Yohida on cats and guinea-pigs, Petrescu on two dogs. All these workers produced by ligation of the cystic duct the drying up of the gallbladder with thickened bile, but without white bile formation.

Then came the experimental work of Peyton Rous and MacMaster. Operating on dogs, they isolated, between two ligatures, a portion of the common duct, and observed in twelve days distention of the ligated part and the presence in it of a colorless, mucilaginous fluid having every appearance of white bile. This sterile fluid contained neither biliary salts nor pigments. A small globe connected with the isolated fragment and included with it in the abdominal cavity permitted collection of the fluid for microscopic analysis. Its constitution was then determined and proved similar to that of white bile. Gosset and W. Mestrezat repeated these experiments in association with Loewy and Mlle. M. Janet and reached the same conclusions.

MacMaster and Peyton Rous, while studying obstructive jaundice in dogs, observed that after some time the blocked ducts filled with a fluid free from pigment and biliary salts, that is to say, with white bile. In the opinion of these workers, this colorless fluid was secreted by the membrane lining the ducts; that is, they *accepted it as a secretion* and, furthermore, as a normal secretion of the bile ducts. They believed that this fluid replaces the bile secreted by the liver cells when the normal secretion is no longer discharged into the ducts.

Such theories do not agree with developments in the gallbladder on which opinion is unanimous. Ligation of the cystic duct does not produce white bile. Is this due to inability of the epithelium to secrete it according to MacMaster's and Peyton Rous' ideas? The answer must be in the negative, since neither the gallbladder nor the duct lining has this property. White bile, in the most authentic cases, exhibits a chemical composition failing by far to conform to the characteristics of a specific cellular secretion derived from any glandular activity whatsoever. Peyton Rous' white bile from the common duct is identical with the white bile yielded by a gallbladder already considerably damaged and reduced to a fibrous wall still provided with capillary vessels.

It may be assumed that the appearance or nonappearance of white bile is caused by certain anatomic or physiologic conditions of the biliary system—conditions which should be looked for in order to solve the problem.

No one discusses the concentration, mucus secretion and bile storage functions carried on by the gallbladder. It is known that gallbladder bile may be ten times as concentrated as that taken directly from the hepatic duct. Water and inorganic salts are absorbed by the bladder walls and passed on to the lympathic ducts and the blood vessels. The absorbed fluid becomes similar in composition to normal saline solution because, in ordinary conditions, only small quantities of biliary pigments, biliary salts and cholesterol are absorbed. It is still open to discussion whether cholesterol is produced by the gallbladder mucosa. This theory is given support by those gallbladders the connective tissue of which is impregnated with the aforementioned lipoid, cholesterol, exhibiting the disturbance called "cholesterosis of the gallbladder," or, when the stress is laid on the appearance of the mucosa, "strawberry gallbladder." In spite of this cholesterol-fat impregnation, no conclusion may be physician, Dr. George Berwick, complaining of being "run-down" and always tired, and she had noticed some fulness of the lower abdomen during the past weeks. Menstruation, which started at the age of 12, was from three to four days' duration and recurred every twenty-eight days; there was no dysmenorrhea. There were two children alive and well, the youngest being 22 years of age; a third had died at birth.

Physical Examination General examination showed no abnormality except a very relaxed perineum and a globular mass in the abdomen On bimanual examination the uterus was found to be symmetrically enlarged, hard, and the size of a three months' pregnancy. It was somewhat fixed and drawn to the right. The appendages were not definable. There was not the slightest doubt in my mind but that I was dealing with a fibroid of the uterus.

Operation. During perineorrhaphy on April 24, 1929, the vagina was found congested, and blue from venous stasis, and bleeding was very free from every cut surface. A thickened band extended up the vaginal wall to the right fornix. This at first was taken as a scar of dystocia, but when its margin was reached in the denudation, the tissue was found very friable, and the venous bleeding was hard to control. However, its true nature was not suspected at the time. When the abdomen was opened, there were no adhesions. The uterus was symmetrically enlarged to the size of a three months' pregnancy and drawn to the right of the pelvis. There was tremendous venous congestion of all the pelvic tissues, and the veins of the pampiniform plexus were engorged and markedly varicose. The right broad ligament was shortened and thickened but plastic. This thickness extended into the right iliac fossa in a continuous extension from the pelvis. The ovary was somewhat enlarged, bound by a few filmy adhesions and contained a small hematoma, and the right fallopian tube, edematous and blue, hung free like a wet drape. The left appendages, congested and edematous, did not present any gross abnormality, and no infiltration in the broad ligament was apparent. The picture transcended all my surgical and clinical experience. The right broad ligament was incised between clamps placed as far out as possible. From the cut surface brainlike tissue immediately oozed out under pressure. This could be wiped off with sponges and was semiliquid The extension of this substance into the right iliac fossa was interpreted as a malignant growth. The left broad ligament was then incised at its uterine end; the left appendages were not removed. The broad ligaments were opened to reach the ascending branches of the uterine artery, with the intention of doing a supravaginal hysterectomy, as the case seemed hopeless. The right broad ligament everywhere was infiltrated by the brainlike substance, and as the right border of the uterus was approached, the finger opened a cavity the size of a filbert, containing the same substance The right artery was not found, and was in all probability occluded. When the uterus was amputated, this same brain like tissue oozed out from the cut surfaces at the isthmus from multiple lymphatic spaces of all dimensions, and on the right side was the aforementioned cavity, now cut across, filled with the same semiliquid tissue. The operation was hurriedly completed, and the patient left the operating room in good condition.

On examining the specimen before leaving the operating room, it was found that the growth extended out from the limits of the uterus on the right side, along the lymphatics of the broad ligament; that these were visible from the surface, coursing out like ropes to the pelvic wall; that the lymphatics, when carefully opened along their long axis, allowed a roll of tissue, like an earthworm, to be removed, leaving the lymph channel intact; that one of these lymphatic molds was 1¾ inches (4.5 cm.) long, pinkish gray and about the size of a full-grown earthworm, and to heighten the resemblance, there was a larger part in the center about ¼ inch (0.64 cm.) long, dark red, evidently discolored by a small hemorrhage, in the substance of the growth. The uterus was then incised longitudinally along its anterior wall, and from hundreds of channels of all dimensions there slowly oozed out this new growth, which evidently was under some general pressure. One could grasp these wellings with a tissue forceps and draw them out. Sometimes they yielded to the traction, leaving a patent lymph vessel that was intact and gaping, or, the new growth, being released from the forceps, sprang back more or less into the lymph cavity. The consistency of these tissues was evidently firmer than that of the cavity about the uterine artery, the contents of which, though having the same general characters, had undergone some slight liquefying degeneration. The uterine stroma was firm but edematous. It was then found that the growth occupied the anterior wall and isthmus, and that the uterine cavity lay with a convexity backward. The posterior wall was about ¾ inch (1.9 cm.) thick and was free from adhes
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epithelium in contact with the fluid. Kausch, Steiner, Berg and Sprengel believe that simple stasis is all that is needed to yield white bile.

I do not feel that there is any real antagonism among these conclusions, although apparently contradictory. "Anything which becomes stationary or stagnant points to death." When the intestinal contents cease moving, the lining becomes injured and loses its functions. It is likewise when urine is retained in a ureter. When blood clogs a vein, the vascular endothelium undergoes a number of changes. Similar examples may be quoted *ad libitum*. Why should not the gallbladder and its ducts undergo a similar pathologic change which may destroy their normal functions?

Conclusions. White bile does not derive from the gall secreted by the liver; it is a well balanced blood dialysate. Its production is a result of biliary stasis, at the level of the ducts, and coming to the gallbladder, of the disappearance of its epithelium or changes in its operation.

PRACTICAL APPLICATIONS

Outside of the satisfaction of arriving at a scientific truth, the views advanced in this paper led to certain practical applications. If, in the course of a surgical operation white bile is found, even though the gallbladder appears healthy or but slightly inflamed, it is best to remove this organ. The presence of this dialysate suggests occurrence of a more or less advanced infection and epithelial damage or destruction. It is useless and even dangerous to preserve a damaged organ. The patient may recover from the operation, but he will almost unavoidably suffer disturbances which will not disappear with diet or medication, even if prolonged.

I have performed two cholecystectomies, years after having drained gallbladders which at microscopic examination appeared healthy. In each case the cause lay in obstructions from extrinsic causes: adhesions to the duodenum and an enormous ovarian cyst. In one case stones developed; in the other, malignant degeneration.

If white bile is a definite sign (as Malda and I believe) of more or less advanced infection and damage of the gallbladder lining, the best judgment in such cases must favor removal of the organ instead of exposing the patient to chronic disturbances or a further operation under less favorable conditions in the future.

SUMMARY

When the bile ducts are obstructed, a fluid is observed at operation varying from clear to slightly turbid and viscous, and greenish in some cases. This is a well balanced blood dialysate. Theories as to its origin are discussed. In such cases an acute, subacute or chronic inflammatory process is present, and removal of the gallbladder is indicated.

RÉSUMÉ

La bile blanche

Quand les conduits biliaires sont obstrués, on trouve à la table d'opération un liquide limpide ou turbide et visqueux ou verdâtre. C'est un dialysat sanguin bien equilibré. L'auteur discute les différentes théories qui ont été avancées sur l'origine de ce liquide. Dan ces cas il y a toujours un état inflammatoire aigu, sous-aigu ou chronique. L'ablation de la vésicule biliare est indiquée.

ZUSAMMENFASSUNG

Weisse Galle

Wenn die Gallenausführungsgänge verstopft sind, sieht man während der Operation eine leicht getrübte und viscöse Flüssigkeit, von grünlicher Farbe, die manchmal auch klar sein kann und ein Blutdialysat ist. Theo-

pregnant, a patient of Dr. Power, entered St. Mary's Hospital with the preoperative diagnosis of degenerating fibroid with superimposed infection. Her complaints were menorrhagia and metrorrhagia, and abdominal pain. The onset dated back seven weeks; it had been acute, and she had been confined to bed for four weeks before Dr. Power saw her in consultation. I saw her in consultation with him a few days later.

Physical Examination. The introitus and vagina were healthy; there was a copious serosanguineous discharge. A mass filled the pelvis, rising to within 1 inch (2.54 cm.) of the umbilicus, and there was a diffuse infiltration of the pelvis and lower abdomen, suggesting a widespread infection. The leukocyte count was 7,000 and the sedimentation rate but slightly more rapid than the normal. There were a low temperature and a normal pulse rate.

Operation. On incision great vascularity and edema of the subcutaneous tissues were noted There were also widespread edema of the parietal peritoneum and signs of a subacute peritonitis extending to about 2 inches (5.08 cm.) above the umbilicus, with recent adhesions. The uterus when freed was the size of a three months' pregnancy. There was a conglomerate tumor composed of uterus, ovaries and tubes intimately bound together by a diffuse intraperitoneal endometriosis. The pouch of Douglas and the uterosacrals were also involved. The rectum was solidly bound to the upper portion of the vagina and the lower third of the uterus. Both appendages were liberated and removed. The uterus was then removed by coning out the length of the cervix. An unusually smooth recovery followed

When the uterus was opened, the walls were seen to be diffusely thickened, and the right upper cornu was filled by a tumor 3 to 4 cm. in diameter, containing a cavity 2 cm. across The cavity lining was smooth and glistening The content, of a pale straw color, coagulated on exposure. The cavity wall was grayish and about 0.5 to 0.75 cm thick and was 0.5 cm. from the uterine cavity at its nearest point Further study of the uterine wall revealed numerous other yellow areas, ill defined from the surrounding tissue, varying in size from that of a large bean to that of a millet seed, and of a granular appearance on the cut surface. These were most numerous in the region of the isthmus and extended from the mucosa to the outer limits of the uterine wall. The cervix was thickened, as was the isthmus. The mucosa of the uterus was thin and hemorrhagic. At the upper margin of the posterior uterine wall near the tubal origin was a subperitoneal nodule the size of a marble, sessile, whitish at its periphery, but dark blue at the center and highest spot, as if filled with blood. This was thought to be a chocolate cyst, but on section it proved to be a congested growth, similar to the others. There was a diffuse endometriosis of the ovaries, characterized by sclerosis, follicular cysts and tarry cysts. Both ovarian tubes were the site of a hematosalpinx.

Pathologic Examination. Sections were taken from almost every part of the uterus, cervix, isthmus, ovaries and tubes. There was a preponderance of stroma in the endometrium as compared with the glandular elements These stroma cells dipped in large strands between the muscle bundles. In places these were broad and richly cellular and stained deeply with hematoxylin and not at all with eosin, so they could be traced with the naked eye or, better still, with greater ease with the inverted eyepiece of the microscope The strands connected directly in places with the tumors, which were made up entirely of stroma cells. Some of these tumors were immediately contiguous with the mucosa; others were deep-seated. The largest tumor was undergoing coagulation necrosis. The small subperitoneal tumor, already described, was of the same type, but, not being subjected to so much pressure, had a type of cell that was endometrial in all its characters. The individual cells had a minimum of cytoplasm which stained very faintly with hematoxylin, a large oval nucleus with a cleancut, deeply staining nuclear membrane, a nucleolus also deeply staining, and a great deal of granular and filamented chromatin. The degeneration process was of a hyaline type, involving equally both tumors and uterine tissues The latter greatly hypertrophied in association with the new growth

The upper part of the cervical canal showed a widespread adenomatous overgrowth of the cervical racemose glands

Diagnosis This was, (1) adenoma of the cervix, (2) endometriosis of the ovaries and (3) stromatous endometriomas of the uterus.

Comment. It will be seen from the case histories just reported how difficult it may be to differentiate these growths from sarcomas. That the growths in all my cited cases were diagnosed as uterine sarcoma is not surprising. But

SARCOMA VERSUS STROMATOUS ENDOMETRIOSIS OF THE UTERUS*

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OF sixteen cases with a diagnosis of sarcoma of the uterus that have come under my observation in the last ten years, fourteen, on close study and in the light of better knowledge, have been proved to be cases of interstitial endometriosis, and the patients are still alive and well; in the other two cases the condition is still in doubt, owing to insufficient evidence and to a lack of a follow up. Undoubtedly sarcoma of the uterus does occur. One would expect it from the unrest of the organ during its functioning years, but the discovery of interstitial or stromatous endometriosis and endometriomas of the uterus has shown that the vast majority of these tumors heretofore diagnosed as sarcoma are really quite benign new growths, as proved by their origin, their mode of invasion, their nondestructiveness, the nonexistence of cachexia, and, last and most convincing, the absence of the lethal qualities of sarcoma. For these fourteen patients are alive and well after periods ranging from two to ten years.

What is stromatous or interstitial endometriosis? It is an invasion of the uterine wall and of the contiguous uterine tissues by the stroma cell of the uterine mucosa. The endometrium, as is well known, is made up of two types of cells, specific in the sense that they are found in the uterus and nowhere else and in that they have a special function. These two cells are the individual stroma cell and the gland cell. Their relationship is not fully known. Is the stroma cell the progenitor of the gland cell, or is it merely a foundation for the support of the gland cell? These are questions which cannot be answered convincingly at the moment. But opinion and research incline one to regard these cells of different origin, noninterchangeable and possessing different functions. I think I may state definitely, as a conclusion of my studies, that their origin is from basically different structures at a different period of embryonic life, and that the stroma cell is not the parent of the gland lining. However, that is not germane to the subject. Functionally, the two cells respond to the hormones which determine the menstrual cyclic changes, but in quite a different way. The gland cells become hyperplastic and seem to spend all their energy in division in the follicular stage of the ovary, to be superseded later by hyperfunctional characters in the corpus luteum stage of the sex organ. Whereas the stroma cell, which heretofore has been a neglected cousin, has a much less conspicuous rôle. These cells enlarge and proliferate during the follicular stage and range themselves into three layers: the basal, the spongy, composed of an open work of glands, and the superficial compact layer, composed largely of stroma cells. The superficial layer takes on a decidual change just before menstruation sets in, and is known as the decidua menstrualis. The later changes are due to vascular regression and are destructive in character. All this is a preparation for, and regression after lack of, impregnation. The object of enumerating these changes is to show is known that there is not only cooperation by substitution of function, but there is also cooperation in the nature of restraint of function. For example, there is a direct antagonism between thyroid and ovarian function, and it is within the experience of every clinician that ovarian function is inhibited in hyperthyroidism, frequently to the degree of causing arrest of menstruation, and that hypothyroidism is chiefly accompanied by menorrhagia and metrorrhagia, which are merely expressions of vitiated ovarian function. What, then, can substitute for the absence of the ovaries in a case of ovarian ablation? Primarily renewed activity of the endometriosis is not due to accessory ovaries, because in one of my cases total ablation of the ovaries was followed immediately by a heavy course of high voltage x-ray therapy, and renewed activity of the endometriosis did not occur until six and a half years after operation. Prolan A of course would come into question, and I think all are agreed that, though prolan may be the stimulating cause, it cannot of itself supply the estrin except through the intermediation of some other organ. It is known that the adrenal gland can act as a substitute organ for the products of testicular and some ovarian hormonal products, but I also believe that endocrinologists are not prepared to admit that the adrenal gland can produce vicariously the true ovarian estrogenic substances. This is a subject full of interest, but as yet inconclusive. That estrin is produced by a substitute organ, if estrin is the cause of endometriosis, cannot be gainsaid. Estrogens are chemically closely allied to the carcinogenic tar substances, and one naturally asks oneself, if, associated with endometriosis of the pelvis, one so commonly finds overgrowth and precancerous conditions of the cervix, whether endometriosis itself is not productive of cancer. And here is a contradiction. For, though on microscopic and clinical grounds, one would assume that endometriosis would readily pass over into a true malignant growth, yet virtually most of the cases of malignant growth with endometriosis have been shown to be cases in which there was an accidental association of the two diseases. Stromatous endometriosis is nonmalignant and is not destructive of tissue or of life. Endometriosis is inhibitory to pregnancy. In my fourteen reported cases there was barrenness or sterility for a period of at least fifteen years. Endometriomas migrate in the uterine wall in a manner similar to that of fibroids. Eventually in their migration they become subserous or submucous, at first sessile, later pedunculated. Intra-uterine polypoid endometriomas are not uncommon. At times the tumors necrose and are shed.

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*Read at the International Scientific Assembly of the International College of Surgeons, New York, May 23, 1939.

TREATMENT

Stromatous endometriosis is a new growth, assuming all degrees of rapidity of division and various degrees of cell embryony. As it is closely dependent on ovarian function for continued activity, removal of both ovaries or mechanical devitalization of these organs generally brings about a quick regression of the endometriosis. In women approaching the menopause such a procedure, whether accomplished by surgical intervention or by high voltage x-ray or radium therapy, is an easy and effective means of overcoming the disease. But endometriosis unfortunately occurs in any of the years of sexual activity, and, when confronted with a case of stromatous endometriosis in a young woman or girl, one is dealing with a serious combination of circumstances. Though it is known that ordinary endometriosis, in which both cellular elements of the endometrium are involved, often regresses spontaneously, one cannot state with the same assurance what is the course of stromatous endometriosis. The number of cases studied has been too few to warproximation. In the local forms of this growth (endometriomas) the tumor may consist of a definite mass with extensive roots at its periphery and without a defining capsule. In the more chronic types a capsule is formed both by compression of the surrounding tissues and by concomitant growth of these tissues under the common growth stimulus. Depending on the chronicity of the growth, the component cell may vary from a small round-cell type through the spindle type to that approaching the component cell of a richly cellular fibroma. The growths are frequently multiple and of varied size and may occupy any site in the uterine wall.

At times the growth is restricted entirely to the mucosa of the uterus. Under these circumstances the mucosa is greatly thickened and almost devoid of glands and is prone to develop more rapidly in places to form polypi. Tissue of this nature obtained by curettage has almost invariably been diagnosed as sarcoma and in the lesser forms as an interstitial endometritis.

It is not known what causes determine an interstitial cell proliferation to pervade the uterine wall in one case and to grow into the uterine cavity in another, any more than it is known what may cause an epithelial growth to develop as a surface papilloma in one case and as an invading carcinoma in another. In the more chronic forms of stromatous endometriomas there is frequently an accompanying mixed endometriosis of the extra-uterine appendages and contiguous pelvic tissues, and in about 30 per cent of cases there are accompanying fibromas and fibromyomas. The extra-uterine endometriosis, giving rise to nodules in the pouch of Douglas, is a valuable aid to clinical and pathologic diagnosis. The presence of the fibroids and myomas and the general hypertrophy of the uterus which accompanies any form of the uterine wall endometriosis are a response of the component cells of the uterine wall to the common stimulus of the abnormal hormonal influence.

Ectopic endometrial invasions of tissues may or may not respond to the hormones of the menstrual cycle. Those invasions that are composed of the two specific elements of the endometrium, namely, stroma cells and gland cells, may or may not respond. This depends on extrinsic and intrinsic factors of the ectopic growth. Among these are locations, soil, organ-host, vascularity and quantum of hormonal stimulus. Ectopic endometrial growths, composed exclusively of stroma, seldom or never respond to the menstrual influences.

Parietal endometrial invasions of whatever kind, but especially in the stromatous types, are usually only the most obvious expressions of the abnormal stimulus. In all the cases of stromatous invasion of the uterine wall, one finds other parts of the genital canal responsive to the same cause, but in a less striking degree. In a large percentage of cases one finds hypertrophic responses in the nature of cystic occlusions, hypertrophy, polypi, ectropion, adenomatous invasion of the cervix and precancerous (so-called) changes in the cervical epithelium. I have already mentioned the frequent association of pelvic endometriosis, fibroids and myomatous growths in association with uterine endometriosis.

In order to give a picture of stromatous (interstitial) uterine endometriosis, I shall outline one case of diffuse endometrosis and one case of endometrioma of the uterine wall.*

REPORT OF CASES

Case 1. *History.* Mrs. M, aged 47 years, was sent to me for hysterectomy for the cure of a fibroid. She had consulted her family

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* For further particulars of cases I refer to my article on "Interstitial Endometriosis" in the "Transactions of the American Association of Gynecologists, Obstetricians and Abdominal Surgeons" of 1938, to the article of similar title, to appear shortly in the *Journal of Obstetrics and Gynecology of the British Empire,* and to my monograph on "Endometriosis," approaching completion.

Der Autor glaubt dass die Ursache dieser Krankheit eine Störung der Ovarialfunktion ist. Die Behandlung besteht in der Entfernung der Eierstöcke oder in Roentgen oder Radiumtherapie.

SUMARIO

Sarcoma versus stromatous endometrósis del utero

Una enfermedad nueva, endometrósis stromatous ó intersticial, es descrita. Esta es una invación de la pared uterina y tejídos uterinos contiguos por el estroma celular de la mucosa uterina. La forma local de la enfermedad es endometrióma. La diferenciación de el sarcoma es dificultosa. De una serie de diez y seis casos observados por el autor en los diez ultimos años, en los cuales el diagnóstico de sarcoma fué hecho, catorce provaron ser casos de endometrósis intersticial, y las enfermas estan vivas y sanas de dos á diez años despues de la operación. Dos casos son reportados en detalle, uno de endometriósis y otro de endometrióma.

El autor cree que el factor causante de ésta enfermedad es un trastorno de la función del ovario. El tratamiento consiste en la extirpación de los ovarios por operación ó por rayos X ó radioterapia.

RIASSUNTO

Sarcoma ed endometriosi stromatosa

Una nuova entità patologica, la endometriosi stromatosa o interstiziale, è descritta. Si tratta di una invasione delle cellule dello stroma della mucosa dell'utero nella parete e nei tessuti attigui. La forma locale della malattia è l'endometrioma. La differenziazione dal sarcoma è difficile. Quattordici casi da una fila di seidici casi osservati dall'autore negli ultimi 10 anni e nei quali una diagnosi di sarcoma fu fatta, provarono di essere endometriosi interstiziale ed le malate erano vive e sane dopo un periodi di 2-10 anni dopo l'operazione. Due casi sono riportati dettagliatamente, uno di endometriosi ed uno di endometrioma.

L'autore crede che il fattore causativo di questa malattia sia un disturbo della funzione ovarica. Il trattamento consiste in rimozione de le ovaie oppure in roentgen o radium terapia.

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Dr. Irvin Abell, of Louisville, Ky., formerly president of the American Medical Association, received the honorary degree of doctor of laws at the annual commencement of Marquette University, Milwaukee, on June 9. The degree of doctor of science was conferred on **Dr. Abell** by Georgetown University, Washington, D. C., on June 3.

The Royal College of Surgeons has awarded to **Professor Leriche** the Lister Medal offered by the Lister Memorial Fund and given every three years since 1920 to a surgeon who has done outstanding work in a special field.

The College of Physicians of Philadelphia has announced that the Alvarenga Prize for 1939 has been awarded to **Dr. Harry Goldblatt**, professor of experimental pathology and associate director of the Institute of Pathology, Western Reserve University School of Medicine, Cleveland, for his contributions to knowledge of the pathogenesis of hypertension. The Alvarenga Prize is awarded each year on July 14, the anniversary of the death of the donor, Pedro Francisco daCosta Alvarenga, of Lisbon, Portugal, who was an associate fellow of the college. It is given to the author of "the best memorial upon any branch of medicine, which may be deemed worthy of the prize."

the members of the staff present in the hospital at the time to examine the extraordinary specimen. There was no doubt in the mind of any one present but that we were dealing with a malignant growth, probably a sarcoma.

Pathologic Examination. The gross specimen consisted of a uterus about the size of a fetal head, showing on section numerous widely dilated blood vessels and lymphatic channels, which contained a soft lymphoid structure in the form of a coagulum. Even below the tube and ovary the vessels were thrombosed. The ovary contained a hemorrhagic body resembling a degenerated corpus luteum. The endometrium was soft and glistening.

Microscopically, sections of the uterus showed isolated and diffuse areas of small, round, deeply staining polymorphic cells, which were lying in a hypertrophied myomatous tissue of the uterus. The blood vessels and lymphatics contained plugs of this growth. The picture was that of a sarcomatous degeneration of a fibromyoma.

Diagnosis. This was sarcoma of the uterus.

Later Course. The patient refused to undergo high voltage x-ray exposure, and when her recovery, which was uneventful, was completed, she was sent back to her physician. Exactly two years later she returned because of metrorrhagia, and on examination it was found that the pelvis was filled with new growth, and that large liver-like polypi protruded through the dilated external os and from perforations of the right fornix, filling the entire vault. These broke down easily on examinaion and bled freely. There was an ill defined mass in the right iliac fossa, which did not cause any symptoms. The patient's general health appeared excellent, and she did not complain of severe pain. It was decided on consultation to excise as much of the polypi as possible and insert radium. This was done on April 2, 1931.

The notation made at the time of operation by the radium specialist who took over the care of the patient under my supervision is as follows: "The vagina was filled with downward-growing sarcomatous polypi of the cervical stump and vault. This growth was continuous with that in the abdomen." The diagnosis was extensive sarcomatous lesion.

Second Operation. The vault and shell of the dilated cervix were cleaned out digitally, and radium was placed in situ, the dosage being 50 mg applied for 30 hours, or 1,500 milligram hours.

Pathologic Report Microscopic sections showed a diffuse cellular structure composed of small round and spindle cells, exhibiting numerous mitotic figures. The tissue was very vascular. The growth corresponded to that seen in the sections taken in 1929, except that no large blood vessels were involved.

Diagnosis. This was small round-cell sarcoma (metastatic growth from the vagina).

Subsequent Treatment and Recovery. Again the patient would not submit to high voltage x-ray treatment, owing to some deep-seated prejudice. She returned in May 1932, thirteen months later. She was in good general health, and her color was excellent. But she now had a growth in the right iliac fossa, the size of a small rugby football, insensitive, hard and fixed. The right leg was three times the size of the left about the thigh, and the ankle was as large as the left thigh. The patient could walk only by dragging the leg along, owing to its unwieldy weight. She was suffering a great deal of pain both in the abdomen and down the leg, and had lost a great deal of weight, but not her cheerful disposition. She finally submitted on combined persuasion to x-ray treatment. Frankly, it was not expected that this would accomplish much. She wished to be operated on, but finally accepted assurances that operation could accomplish nothing useful.

Dr. Howard Pirie began x-ray treatment on May 10, 1932, completing the course on June 7. There were eleven treatments in all. The total number of hours was two and three-quarters, with 5 milliamperes and 200 kilovolts peak at a distance of 15 inches (38.1 cm.) applied for fifteen minutes.

The change was extraordinarily rapid. Within two months the abdominal growth was barely palpable as a small induration in the right lower quadrant; the vagina and cervix presented nothing abnormal, and on bimanual examination there was some induration in the right fornix which seemed to connect with the induration in the abdomen, though this could not be definitely determined. What impressed the patient and her friends most was that her swollen leg soon regained its normal dimensions and functions.

In May 1939, ten years after the patient was first operated on for sarcoma, she was in excellent health.

CASE 2. This is case 8 of my series previously published. It is the case which by its unusual characters led to a complete retrospect of the other cases, and in the light of this new knowledge enabled a new concept and diagnosis to be made and a clear perspective to be obtained.

History. Mrs. D., aged 26, who had been married but a few months and had never been nized, may later be attributed to the operative procedure. However, the patient's symptoms in such a case should arouse some suspicion that the ducts are involved, and exploration should reveal this condition. It is possible, as shown by some of our cases, that strictures may exist for a long time and produce relatively mild symptoms as long as the bile is normal in consistency. However, if infection intervenes and the bile becomes thick and mucoid, chills, fever and jaundice will probably appear. These, of course, also are symptoms of an overlooked stone in the common duct, and it may not be possible to make a diagnosis until operation. A detailed history of each case will frequently give a clue.

We are, then, dealing with a more or less new disease entity—one which is brought about, first, by the popularity of cholecystectomy over cholecystostomy, which was performed more commonly twenty years ago, and, second, by the fact that with more explorations of the common duct, additional accidents are to be anticipated. It is important, therefore, first, to point out the possible dangers of such procedures and, second, to build up a defense procedure for correction of the condition. This is best done by reviewing the articles of those who have been interested in the subject and to profit by their wide experience. Walters,[3] Lahey[2] and Eliot[1] have made notable contributions from which all surgeons may profit.

OPERATIVE PROCEDURES

The common operative procedures for strictures from any cause are about five in number and are as follows:

1. *End-to-End Anastomosis.* If the duct is accidentally divided at the time of operation and if such an accident is recognized and repaired at the time of operation, I believe there is a good chance that a satisfactory result will be obtained. A successful approximation may be made, and there is not a great deal of scarring as there is in the case where a stricture has been present for a long time. Furthermore, infection is not present as it is in the long-standing stricture, which may, on account of chronic obstruction, lead to infection in the ducts and in the liver. In addition, in a case of too long standing, it may be necessary to excise a considerable segment, and the sutured ends of the duct may be under tension which will generally result in failure of reformation of the stricture. While there have been brilliant results from such a procedure, the routine use does not seem to be in favor.

2. *Choledochoduodenostomy.* This is applicable to strictures involving the terminal portion of the duct, especially when the gallbladder has been removed. It has also been used when the ampulla of Vater has been resected for papilloma or carcinoma. A variety of technics have been employed, with good results.

3. *Hepaticoduodenostomy.* Since in many cases reconstruction must be made following operative trauma which occurs at or above the level of the cystic duct where the distal portion of the duct often cannot be located, hepaticoduodenostomy in such cases is the operation of necessity and, I believe, of choice.

4. *Implantation of the Biliary Fistula into the Stomach, Duodenum or Intestine.* While I have had no experience with this procedure, it is the opinion of those who have used it that it is an operation of necessity and not of choice. Lahey,[2] who originally was very enthusiastic about it, feels that it should be done only as a last resort in cases where no hepatic duct is demonstrable for anastomosis. If one is fortunate enough to end up with a biliary fistula in such a case, an attempt may be made later to transplant it. Objections to this method are: further formation of strictures in the fistulous tract or subsequent infection which spreads to the liv

closer study of these cases with the increased knowledge on the subject, together with a study of the follow-up system, makes it inevitable that the diagnosis be changed for a much more favorable one. Most encouraging is the fact that all the patients are alive and well from two to ten years after operation—a result inconsistent with sarcoma. Moreover, the connection of these growths with the endometrial stroma and their propagation from this source leave the matter no longer in doubt.

WHAT IS THE CAUSE OF ECTOPIC ENDOMETRIAL GROWTH?

In endeavoring to answer this question one passes from the factual to the hypothetic. The philosophic precedes the scientific in all branches of study. It is known that the ovary is, if not the primary, at least an essential, intermediary for the functioning of the endometrium. Menstruation ceases with the removal of the ovaries. It is known with equal certainty that the ovary is almost essential for the continued growth of ectopic endometrial tissue. The cases on record of continued or renewed activity of endometriosis after bilateral ovariotomy are few indeed in the literature. However, they do occur, as a case already reported by me, in which the condition recurred with extraordinary virulence seven years after bilateral ovariotomy and a full course of high voltage x-ray therapy. It is known equally well that except for two cases reported in the literature (and these doubtful), the disease is limited to the zone of ovarian influence. The hormone of the ovary, which would seem to be the culpable agent, is the growth hormone, estrin or one of its derivatives. How does it operate? Estrin causes great thickening of the endometrium by a multiplication of its cells, during the maturation of the ovarian follicle. Progesterone, on the other hand, is the maturation principle of the endometrial function, causing the endometrium to become succulent preparatory for nidation. In the intermediate stage, after rupture of the follicle, one finds a diminishing effect of estrin and increasing effect of progesterone as maturation of the corpus luteum proceeds.

If endometriosis is the result of an excessive action of estrin, this excessive action may be brought about by one of two means. It may imply an excess of estrin in the blood, which should be measurable. But it is known that the amount of estrin in the blood may vary within wide limits without producing appreciable physiologic or pathologic results. There is a close analogy in the sugar content in the blood. One has to take into account the individual susceptibility in each case. But it is known also that estrin can be retained in the tissues in large quantity and is not liberated except by a liberal supply of progesterone. Could it not be, then, that endometriosis is due to a lack of progesterone, causing undue and prolonged action of estrin in the endometrial cells? For the endometrial cells are thought to be the repository of estrin retention. Be that as it may, one must recognize that the ovarian function plays a very prominent rôle in endometriosis. But how can one explain the continued or renewed activity of the endometriosis after bilateral ovariotomy? Nature seldom trusts the permanence of the species to any essential function of a single gland. The glandular system possesses a vicariousness that is unknown in any other corporeal function. Substitutive function is an interesting feature of endocrinology. The glands of internal secretion are like a group of banks cooperating for mutual protection, and individual or collective help is always at hand. Fatigue in a gland can be temporarily remedied by assistance from adjuvant glands; but exhaustion of the reserve of a gland eventually entails exhaustion of the subsidizing glandular systems. It vals, increasing the time daily as long as the patient does not complain of pain which means obstruction from some cause. We have insisted that the tube remain in place for three to six months. Before the tube is removed, a cholangiogram is made, brominol or lipiodol being used. Fluoroscopic examination is valuable in ascertaining free exit of the solution into the duodenum. The tube originally was withdrawn, but, as has been pointed out, some damage may occur to the anastomosis when the arms of the T-tube are bent during removal. This is obviated somewhat by the cutting of a V opposite the stem of the T-tube in order to allow the ends to bend more easily. However, experience with several cases has shown that it is not necessary to remove the T-tube. In one of our earlier cases, the T-tube rotted away to the level of the skin; one night it disappeared under the skin, and the patient of course became alarmed. When he reported within a few days, no trace of the tube could be found. The skin was closed in over the sinus, and nothing was done. Peristalsis drew the T-tube through the anastomosis with no discomfort, and since this experience it has been our plan of treatment to cut the T-tube off below the level of the skin when sufficient time has elapsed and let it pass through the intestinal tract. This is a gradual procedure and will not result in tearing of the anastomosis. It has been done in five of our cases.

The following case is typical of those in which hepaticoduodenostomy was performed.

History A man 32 years of age was admitted to the clinic on Jan 4, 1939, complaining of jaundice and generalized pruritus. Ten months previously, in March 1938, cholecystectomy for cholelithiasis had been performed elsewhere The presenting symptom at that time was pain, which had been present for three days in the upper portion of the abdomen Jaundice had not been associated with this attack The diagnosis was acute cholecystis with stones There was a severe hemorrhage at operation The immediate postoperative course had been stormy; jaundice developed, and on the fourth day the incision broke down and bile drained from it. However, this had healed within three weeks, and the patient was able to leave the hospital.

Mild jaundice without pain persisted with varying intensity until six weeks before entrance to the clinic, when it became more pronounced and was associated with generalized itching. At no time had there been abdominal pain. Stools had varied from yellow to clay-colored, and the urine had been dark. The past history was negative except that thyroidectomy had been performed for diffuse goiter with hyperthyroidism in July 1936.

Examination. Physical examination revealed a frail young adult who weighed 126 pounds (57.2 Kg.). The temperature was 97.9 F., the pulse rate 80, and respirations 20. The skin presented a moderate icterus, and the sclerae were slightly tinged. Recent excoriations due to pruritus were scattered over the trunk extremities.

Examination of the abdomen revealed the liver to extend one finger's breadth below the costal margin. No other masses and no tenderness were detected.

On admission, a diagnosis of stricture of the common duct was made.

Blood studies revealed an icterus index of 20. The prothrombin time was determined and found to be 15 seconds, 20 seconds being normal (Eating).

Twenty cubic centimeters of a 10 per cent solution of calcium gluconate, together with 1,000 cc. of a 5 per cent solution of dextrose in saline solution, was given intravenously each day for five days, affording marked relief from the pruritus. Repeat studies of the blood on the fifth day showed that the icterus index had risen to 25 units, while the prothrombin time was 17 seconds.

Operation. An exploratory laparotomy was performed Jan. 10, 1939. Close to the under surface of the liver adhesions were divided, finally exposing the portion of the hepatic duct about 1 cm. from the liver A probe was passed into the duct, which was slightly dilated, liberating a considerable quantity of normal appearing bile. The probe could then be passed easily into the right and left hepatic ducts, the openings of which could be visualized through the end of the hepatic duct. However, on attempting to explore in the downward direction toward the common duct, obstruction was encountered, and the common duct could not be demonstrated. The duodenum was mobilized and brought up and approximated to the end of the previou
sected hepatic duct. An opening was

rant any conclusions to be drawn in respect to the course. It is known, as outlined in my work, that spontaneous degeneration frequently occurs, but under the present circumstances it would be hazardous even to venture an opinion as to whether this is merely a liquefaction due to local vascular derangement or the initial step to a complete cure. There is another inhibitory factor to a discriminating treatment, and this is the fact that the diagnosis of interstitial endometriosis and endometrioma is seldom made except at operation or by biopsy, so in the majority of cases one will have completed one's operation under a temporary false diagnosis, or the treatment by radium or x-rays will have been carried out under a permanently false diagnosis. At most, one can state that stromatous endometriosis and endometrioma is a new disease and will require a great deal of painstaking study of large numbers of cases before one can be dogmatic as to its cause, course and end-results.

SUMMARY

A new disease, stromatous or interstitial endometriosis, is described. This is an invasion of the uterine wall and contiguous uterine tissues by the stroma cell of the uterine mucosa. The local form of the disease is endometrioma. Differentiation from sarcoma is difficult. Of a series of sixteen cases observed by the author in the last ten years, in which a diagnosis of sarcoma had been made, fourteen were proved to be cases of interstitial endometriosis, and the patients are alive and well from two to ten years after operation. Two cases are reported in detail, one of endometriosis and one of endometrioma.

The author believes that the causative factor in this disease is a disturbance of ovarian function. Treatment consists in removal of the ovaries by operation or in x-ray or radium therapy.

RÉSUMÉ

Le sarcome et l'endométriose de l'utérus

L'auteur décrit une nouvelle maladie, l'endométrioise interstitielle. Cette condition est dû à un envahissement de la paroi utérine par les cellules interstitielles de la muqueuse utérine. La forme locale de la maladie est l'endométriome. Le diagnostic est difficile. Il importe d'exclure le sarcome. Dans une série de seize cas diagnostiqués sarcomes, il fut démontré que quatorze étaient des cas d'endométriose interstitielle. Ces malades furent opérées et tenues sous observation de deux à dix ans après avoir été opérées. Les malades sont toutes bien portantes. L'auteur décrit en détail deux cas, un d'endométriose et un d'endométriome.

L'auteur attribue la maladie à un dérangement fonctionnel de l'ovaire. Le traitement consiste en l'ablation de l'ovaire ou en l'emploi des rayons X ou du radium.

ZUSAMMENFASSUNG

Sarkom versus Endometriosis des Stromas

Eine neue pathologische Einheit, die interstitielle oder stromatöse Endometriosis, ist beschrieben. Diese ist eine Invasion der Stromazellen der Gebärmutterschleimhaut in die Wand des Uterus und die umliegenden Gewebe. Die lokale Form der Krankheit ist das Endometriom. Die Unterscheidung vom Sarkom ist schwierig. Vierzehn Fälle aus einer Serie von sechzehn Fällen, die der Autor in den letzten 10 Jahren beobachtet hatte und in denen die anfängliche Diagnose Sarkom war, erwiesen sich später als Endometriosis und waren nach einer Zeitspanne von 2-10 Jahren nach der Operation am Leben und gesund. Zwei Fälle werden ausführlich beschrieben, und zwar einer von Endometriosis und ein anderer von Endometriom.

mosis without the intervention of rubber tubes. The most successful anastomosis is done in the same manner as intestinal anastomosis, without intervention of tubes. I never use the T-tube, because I work on an individual basis, and one cannot set rules.

In 1921 I reported the case of a woman whose common duct had been destroyed by one of our master surgeons. There are many similar cases, although such accidents should be rare. In fact, in one case I deliberately cut across the common duct, on account of many adhesions to the gallbladder, in order to remove a badly diseased gallbladder. The patient had a T-tube in for six months and is now well.

I believe that the T-tube may remain for six months, or even for two years, if required. There is no danger in allowing the tube to remain, as long as one clamps it during the day and does not allow too much bile to flow.

RÉSUMÉ

Blessures du cholédoque: Causes et réparation

Les blessures des conduits hépatiques et du cholédoque sont plus fréquentes depuis que les chirurgiens préfèrent la cholécystectomie à la cholécystostomie et depuis qu'on explore le cholédoque pour dépister des calculs biliaires. Le traitement demande premièrement qu'on évite de blesser le cholédoque lors des maneuvres opératoires; secondairement une hépaticoduodénostomie ou une cholédocho-duodénostomie. Ce sont les deux meilleurs procédés opératoires. L'auteurs passe en revue douze cas dont un est minutieusement détaillé.

ZUSAMMENFASSUNG

Verletzungen des Ductus choledochus: Ursache und Behandlung

Die Verletzungen des Ductus choledochus und hepaticus sind seitdem die Cholecystectomie anstelle der Cholecystostomie allgemein angewandt wird und seitdem man die Exploration des Choledochus auf der Suche nach Steinen ausführt bedeutend häufiger geworden. Die Behandlung besteht erstens darin dass man einer Verletzung vorbeugt indem man den Ductus während einer Cholecystectomie sichtbar macht und zweitens in der Anwendung einer Hepaticoduodenostomie und Choledochoduodenostomie, die mehr Aussicht auf Erfolg als andere Methoden haben. Zwölf Fälle sind beschrieben und einer ist ausführlich behandelt.

SUMARIO

Lesiones del conducto común biliar: Causas y reparación

Las lesiones del conducto común y hepático biliar ha aumentado con la popularidad de colecistectomía en preferencia á la colecistostomía y la mas frecuente exploración del conducto comun biliar en la busca de piedras. El tratamiento es, primero, prevención de tales lesiones por visualización en el momento de la colecistectomía y, segundo, una hepaticoduodenostomía ó una coledocoduodenostomía, las cuales dan mas chance de éxito que otro procedimientos. Doce casos son revisados, uno de los cuales es reportado en detalle.

RIASSUNTO

Lesioni del condotto bileare comune: Causa e riparo

Lesioni del condotto hepatico e comune sono aumentate molto con la propagazione della colecistectomia invece della colecistostomia e della esplorazione più frequente del condotto comune in cerca di pietre. Il trattamento è primo di prevenire queste lesioni visualizzando il condotto durante una colecistectomia e secondo una hepaticoduodenostomia o una coledocoduodenostomia che dànno più possibilità di sucesso che altri metodi. Dodici casi sono considerati ed uno è riportato in esteso.

COMMON DUCT INJURIES

CAUSATION AND REPAIR*

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A REVIEW of the literature for the past ten years on surgery of the biliary tract impresses one with the frequency and seriousness of damage to the hepatic and common bile ducts. There are two reasons for this: first, the popularity of cholecystectomy over cholecystostomy, and, second, the more frequent exploration of the common bile duct in a search for stones. Inexperience of the surgeon has contributed chiefly to these disastrous results, but occasionally accidents may happen in difficult cases even with an experienced surgeon.

Anomalies of the duct account for a few accidents, but the majority of accidents result from incomplete exposure of the duct during operation or clamping blindly for hemorrhage in cases in which the cystic artery slips away from the clamp or the ligature becomes loose. The cystic artery is a branch of the right hepatic artery and branches off at a level above the cystic duct, so that in some cases the damage has invariably been in the hepatic duct at a distance of ¼ to 1 inch (0.64 to 2.54 cm.) below the bifurcation of the right and left hepatic ducts. In case of hemorrhage from the cystic artery, one can avoid the blind application of the clamp if one will place the finger in the foramen of Winslow and compress the gastrohepatic omentum between the thumb and forefinger, thus assuring a dry field and enabling one to pick up the bleeding point when the pressure is released.

Dr. Lahey[2] attributed some of the accidents to the fact that after the cystic duct is cut, traction on the hemostat tears away the cystic artery, resulting in bleeding, and then the hemostat is applied blindly. At any rate, however the bleeding occurs, it probably accounts for many of the disasters encountered.

Actual injury to the duct may occur, first, from anomalous ducts or, second, from incomplete exposure of the structures before cholecystectomy. As stated by Eliot,[1] "Abnormalities in the course, length, and termination of the cystic duct and variations in the cause, origin, and distribution of the cystic artery are important predisposing causes." Complete exposure will generally reveal the occasional anomaly. A review of the cases seen by my associates and me showed that many of the patients were quite thin, that is, patients in whom one would not expect damage to the ducts to occur. However, the damage takes place because a great deal of traction is put on the gallbladder, angulating the common duct, with the result that either an oval segment is taken out of the duct by the curved clamp or the duct is cut across completely. We have had examples of each proved at operation. If an oval segment is removed by the clamp, stricture results within a period of months or years. If the duct is completely cut across, the patient will have symptoms of trouble immediately after operation.

One, of course, must also bear in mind the fact that stricture may occur from ulceration of stones and may be a coincidental condition at the time of cholecystectomy, which, if not recogby resorting to devices such as placing an occasional interrupted suture for security; Bickham[1] said it is well to tie at several points (without intermitting the stitch) to do away with any possibility of the suture acting as a draw-string and constricting the opening, and Horsley[5] recommended taking a back stitch at every third stitch to lock the suture line. I have for a long time used such devices, but have finally become convinced that it was possible to devise a continuous suture having all the necessary qualities by systematically utilizing the principle of reversing and crossing, and have evolved such a suture. I believe that this suture combines the two essential principles suggested by Moynihan[7b]—simplicity and safety.

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* Read at the Scientific International Assembly of the International College of Surgeons, New York, May 22, 1939.

CONTINUOUS REVERSE-CROSSED SUTURE

The continuous reverse-crossed suture is designed mainly for the inner through and through suture in gastro-intestinal anastomosis or entero-anastomosis and closure or repair of the stomach or intestines. Its purpose is to afford a high degree of safety, good hemostasis, accurate coaptation and inversion, protection of the seromuscular sutures and protection against leakage, to minimize tissue strangulation and necrosis and to induce better healing and minimum scar and ring contraction.

It is a continuous suture in which every other loop is reversed. This process of advancing and reversing forms a series of alternating forward and reverse loops which cross each other (fig. 1). For the purpose of description, the combination of two such alternating loops with their crossing limbs is called a suture unit. The distance between the two loops is about the length of the combined thicknesses of the tissues included. The latter are thus held between the opposing loops and their crossed limbs, equalizing the pressure in all directions. Suture units are connected by the advancing forward limb, which gives a small amount of slack, for expansion of the suture, thus allowing for tissue swelling. The limbs cross always on the mucosa side, while only a short section of each loop shows on the serosa side. The opposing tensions of the forward and reverse loops with their crossing members give support and stability to the suture unit, producing an equalized compression of the tissues within its grasp. The units are continuous, the advancing limbs connecting the units and forming the forward loop of the next suture unit. The units are placed closely together so that all the tissues of the full length and thickness of the suture line are incorporated.

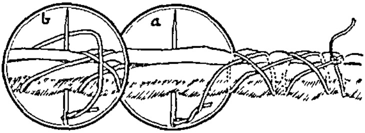

FIG 1 The reverse-crossed stitch as used for the inner through and through suture. The suture unit *a*, forming the forward loop. *b*, the forward loop in place; forming and locking the reverse loop.

Advantages. Because of its architecture, this suture is better able to withstand the varying stresses and strains of filling and emptying of the viscera by fluids and gases, thus protecting the seromuscular sutures from exposure and from tearing out by sheer pull of heavy fluid-filled loops of bowel. Because the loops of each unit oppose and cross each other, damage or even a break in one loop will not have a disastrous effect on the whole suture line. Because the tissues held within the suture unit are equally compressed from all sides, there is less danger of tissue necrosis and cutting out than there would be when tissues are held tightly within a circular loop. There is also little danger of blood vessels slipping out of the grasp of the suture. While a running suture is likely to shirr or

5. *Cholecystogastrostomy or Cholecystoduodenostomy.* This is a useful procedure, but it is limited certainly to those cases in which there is not much infection, and one must be sure of the patency of the cystic duct.

REVIEW OF CASES

I wish to report briefly my experience with twelve cases which necessitated an operation for the relief of stricture of the bile ducts. In seven of these a hepaticoduodenostomy was performed, and in four cases a choledochoduodenostomy, and in one case we were unable to locate any trace of the hepatic duct. In the latter instance a catheter was placed deep in the liver bed, with resultant formation of a biliary fistula, which is four months old at the time of writing. It is in this type of case that transplantation of the fistula is all that one can do.

The four choledochoduodenostomies were performed for the following conditions: stricture of the terminal portion resulting from stone, in two cases; resection of carcinoma of the ampulla of Vater, in 1 case, and papilloma of the lower end of the common duct, in 1 case. In all seven cases in which hepaticoduodenostomy was done, this was performed for stricture at or above the cystic duct resulting from cholecystectomy which had been performed at periods varying from two months to three years previously.

The technics of choledochoduodenostomy and hepaticoduodenostomy have been many and varied. In some, anastomosis has been made directly, sometimes over the implanted tube. I cannot in a brief paper discuss these variations. I shall allude only to the procedure which was used in my own eleven cases.

It was apparent from reading the literature that cholangeitis was frequently the cause of death, and in many patients it occurred immediately after operation. In these cases direct anastomosis over a buried tube was used. In view of that fact, I felt that an additional precaution would be institution of external drainage immediately after the operation, thereby avoiding the preliminary obstruction resulting from ėdema around the anastomosis, which generally is the beginning point of trouble. Therefore, in one of my early cases I made the anastomosis over a T-tube. This allows free drainage immediately after operation, and I think is accountable in some measure for the fact that only one patient in this group died as a result of operation. This was a patient who had had a cholecystectomy two and one-half years previously, and a secondary operation for stricture of the common duct three weeks later, when an end-to-end anastomosis of the duct had been attempted. This failed, and she had been jaundiced for two years before she came to us. The hepatic duct was found and anastomosis satisfactorily made. She had, however, a dark green, markedly enlarged cirrhotic liver such as one would expect from long continued obstruction and infection. One hundred and fifty cubic centimeters of bile was drained the first day. This amount gradually diminished day by day until on the tenth day none was drained. On this day bleeding from the wound began in spite of transfusion and the administration of desicol and vitamin K, and the patient died two days later. All the other patients made uneventful recoveries following operation.

Postoperative care is symptomatic. It has been our custom to let the tube drain fully without clamping it off until the jaundice has practically disappeared. This decompresses the liver and clears up the infection. During this time, transfusion, vitamin K and desicol are freely given to avoid the possibility of hemorrhage. The patients are encouraged to eat as soon as nausea ceases. When the jaundice disappears, we begin to clamp off the tube for hourly inter-held together horizontally; the needle emerges from within opposite the operator, one space forward of the angle loop. It is then brought directly across to the operator's side, where it pierces the near edge, entering the lumen, thus forming the first forward loop. The direction of the needle is then reversed, the needle traveling within the lumen diagonally across and backward toward the far edge, emerging close to the angle loop (fig. 4*a*). The needle is again returned to the near side directly opposite the point of emergence, piercing the near edge and thus forming the first reverse loop. It then advances diagonally to the far side the full length of the next suture unit, forming its forward loop (fig. 4*b*). As the loops are placed they are tightened and the edges inverted with a forceps. The suture units continue to the starting point of the posterior suture line, where the ends are tied in the usual way. The seromuscular suture is then completed and locked by reversing every third stitch. The angles are reenforced by interrupted Lembert sutures.

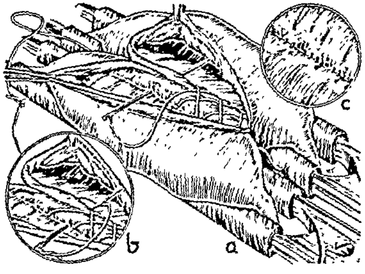

FIG 3 *a*, posterior layer of the inner through and through suture, the needle forming the forward loop *b*, the needle forming and locking the reverse loop. *c*, appearance of the suture line on the serosa aspect

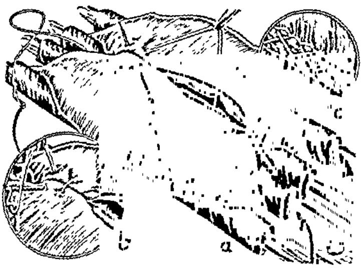

FIG 4 Anterior layer of the continuous reverse-crossed through and through suture *a*, the suture emerging from within forming the forward loop, the direction of the needle reversed to form the reverse loop *b*, the needle completing the reverse loop and advancing within to form the next forward loop *c*, appearance on the mucosa aspect

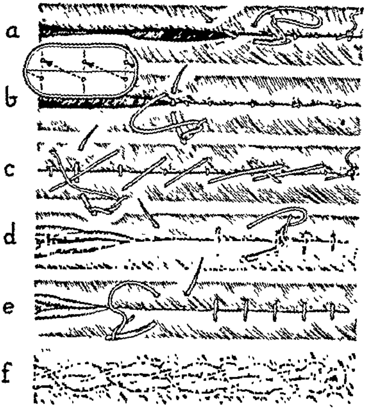

FIG. 5. Diagrammatic descriptions and modifications *a*, oblique-right angle stitch—progress of the needle through the seromuscularis. *b*, same stitch as shown in *a*, with the needle in the position of reverse-locking The insert shows the direction of the needle through the tissues. *c*, reverse-lock applied to Lembert's stitch. (The stitch here is not tightened to show the technic.) Note the long, exposed connecting limbs in comparison with *a* and *b* *d*, modification of the inverted reverse-crossed suture for fascia approximation, the suture forming the reverse loop when tightened, the needle in position for the forward loop *e*, suture forming the forward loop, the needle in position for the reverse loop. *f*, under surface of the approximated fascia. Note that the knots and practically all the suture material are on the under surface. The suture line is thoroughly locked by crossing members, the long limbs acting as relaxation sutures.

The suture when correctly placed should have the crosses and [illegible] loops, representing the [illegible] the suture material, on [illegible] to the duodenum, and an anastomosis with the stump of the duct was constructed over the arms of a T-tube. It was necessary to place one arm in the left hepatic duct in order to make it stay in place, the stump of the hepatic duct being too short. It was noted that bile flowed from the long end of the tube after the operation and that none escaped at the site of the anastomosis. A transfusion of 500 cc. of citrated blood was given during the operation.

Subsequent Course. On the fourth postoperative day the T-tube was clamped off for two hour intervals, without causing discomfort or leakage of bile around the tube. The following day the clamp was applied continuously, without untoward results.

By the eighth day the stools were dark, and it was apparent that bile was passing into the intestines, but the icterus index remained 20 units. The prothrombin time remained normal, and there was no indication of a hemorrhagic tendency.

On the sixteenth day the icterus index had fallen to 10 units, and the jaundice had obviously decreased. At the time of discharge on the eighteenth day (January 28) the patient looked and felt greatly improved, the stools were dark, and the tube had remained clamped off without leakage for several days.

When examined twelve days later (February 9) the patient weighed 133 pounds (60.3 Kg.), a gain of 7 pounds (3.2 Kg.), and the icterus index was 10 units. His appetite was good, and he felt excellent.

A follow up of this group of patients has shown that one died three years postoperatively of an intercurrent disease. Another has had severe attacks of cholangeitis. In this case, however, several such attacks had followed cholecystectomy and an attempted end-to-end anastomosis of the duct before we saw her and did a hepaticoduodenostomy. This case demonstrates the necessity of operating on these patients early, before they have attacks of chills and fever, which mean obstruction and infection. The remaining patients of the series are alive and in excellent health.

SUMMARY AND CONCLUSIONS

Injuries of the hepatic and common bile ducts have increased with the popularity of cholecystectomy in preference to cholecystostomy and the more frequent exploration of the common bile duct in search for stones. Treatment is, first, prevention of such injuries by visualization at the time of cholecystectomy and, second, a hepaticoduodenostomy or a choledochoduodenostomy, which gives more chance of success than other procedures. Twelve cases are reviewed, one of which is reported in detail.

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DISCUSSION

Dr. Rodriguez Diaz, Havana, Cuba: I wish to discuss section of the cystic duct in the process of dissecting and tying this duct. In order to avoid this accident I do careful dissection of the duct. In cases in which there is severe pericholecystitis, and dissection is difficult, I do the cholecystectomy from the fundus to the neck, leaving the dissection of the cystic duct for the last, and if I still have doubt I puncture the gallbladder, extract all the stones and bile, and, enlarging the opening, introduce the index finger into the gallbladder and dissect it as one would a hernia sac until I reach the cystic duct. When this stage is finished I change my gloves and continue the operation.

Dr. Moses Behrend, Philadelphia: Dr. Jones has presented a subject that is of intense interest to me. The peritoneum covering the ducts and blood vessels should be opened, and the cystic and common ducts and the cystic artery visualized, before any clamps are put on. If this is done, there will be fewer injuries than occur every day all over the world.

Surgery of the common duct is the most difficult one can do. Of 124 cases, in 81 a choledochostomy for stones was performed, and in about 30 cases the gallbladder was drained, because I did not believe at the time that a cholecystostomy should be done.. But now one can perform it, notwithstanding the presence of jaundice in the common duct. In 20 cases no jaundice was present. In 44 cases we performed all kinds of anastomosis of the common duct to the duodenum or to the stomach, and I prefer to do the anastoture. The ends of the guide suture may be tied to the respective ends of the reverse-crossed suture.

SUMMARY

The author's continuous reverse-crossed suture is characterized by alternating forward and reverse loops the limbs of which cross and lock each other. It is placed overhand when sewing on the mucosa side and inverted when sewing from the serosa side. It incorporates the whole length and thickness of the edges with equalized compression. It is stable, yet not too rigid, being capable of some expansion allowing for tissue swelling. It is therefore a physiologic suture performing efficiently the functions of an inner through and through suture, namely, approximation, hemostasis, inversion, safety against leakage and protection of the seromuscular sutures. In addition, its continuity is not easily disrupted because of its alternating change in direction and self-locking. It is an all-purpose inner through and through suture and incorporates the two essential principles suggested by Moynahan—simplicity and safety. In its inverted form, this suture is well adapted to fascia suturing, placing most of the suture material as well as the knots under the fascia surface, thus lessening the probability and incidence of abscess.

The continuous oblique-right angle suture is devised to give a more even, unpuckered and quickly applied seromuscular suture line with practically all the suture material buried. It advances obliquely through the visceral surfaces with one needle thrust, then at right angles straight across, linking the two surfaces. By reverse-locking every third stitch, safety is added to its simplicity and ease of application.

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RÉSUMÉ

Une nouvelle méthode de suture gastro-intestinale

Le point de l'auteur est un point de couture ressemblant au point de boutonnière. Il est caractérisé par des anses alternantes, renversées et fixées. Ce surjet passe au-dessus de la muqueuse et rabat la séreuse. Il incorpore toute la longueur et toute l'épaisseur des bords par une compression uniforme, et permet une certaine expansion pour le gonflement des tissus. La suture oblique et à angle droit nous donne une ligne de suture unie et sans bourrelets. Elle est séro-musculaire et presque entièrement enfouié. En renversant et fixant chaque troisième point on ajoute la sûreté à la simplicite et à la facilité d'éxécution de la méthode.

ZUSAMMENFASSUNG

Eine neue Methode für Gastro-Intestinalnähte

Der Autor beschreibt eine fortlaufende Retour-Kreuzstichmethode, die durch abwechselnd vor-und rückwärts geknüpfte Knoten charakterisiert wird. Sie kommt beim Nähen der Mucosaseite nach oben zu liegen und ist beim nähen der Serosa umgedreht. Die volle Länge und Dicke der Wundränder ist mit gleicher Kompression inbegriffen und

A NEW METHOD OF GASTRO-INTESTINAL SUTURING

WITH THE CONTINUOUS REVERSE-CROSSED INNER SUTURE AND THE CONTINUOUS OBLIQUE-RIGHT ANGLE SUTURE*

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INDIANAPOLIS

It is generally accepted that the success of gastro-intestinal operations depends largely on the thoroughness, accuracy and care in placing the sutures used in coaptation and hemostasis. While there is a difference of opinion as to the number of layers of suture necessary to insure good healing in gastro-intestinal anastomosis or closure, an analysis of the functions of these suture layers suggests that the innermost suture is the most important. Its function is to insure hemostasis, to secure accurate approximation, to produce a water-tight and air-tight connection and to protect the seromuscular layers from the contaminating effects of the visceral contents. With a well placed and efficient inner through and through suture, the seromuscular sutures are well protected and are not exposed, and the serosa heals quickly and firmly before the inner suture is absorbed or is shed into the visceral lumen. This suture, if inefficient or poorly placed, may be the cause of postoperative hemorrhage, tissue necrosis and ulceration, leakage and peritonitis. The latter is more often due to leakage than to soiling of the peritoneum during operation. The seromuscular suture, which is usually of nonabsorbable material, if improperly protected by the inner suture may be exposed to the visceral contents, may become a foreign body and gradually slough into the lumen. Occasionally it may become the site of an ulcer. The importance of an efficient inner through and through suture, the first line of defense, cannot be overemphasized.

I have for a long time looked askance at the generally accepted methods of placing this all-important inner through and through suture as being inadequate. The continuous through and through running suture, either free or locked, is used almost universally for the posterior layer in gastro-intestinal anastomosis. Glover's[6] free running suture, Heister's[4] continuous lockstitch and their modifications have long been in use; yet they are most unstable. One weak loop or a break in the suture material jeopardizes the whole suture line. They are subject to shirring, stretching, relaxation and contraction from the uneven pull of a heavy fluid-filled viscus or from distention due to gas. They provide poor hemostasis unless tightened sufficiently to strangulate the tissues, and they do not adequately protect the seromuscular sutures. In the anterior layer of the inner through and through suture, the Connell[2] stitch or a modification is often used. While it is efficient in turning in the edges, it is not effectively hemostatic or leak-proof, since it grasps and compresses only a small segment of each edge. The through and through interrupted Lembert and Halstead mattress stitches are also used in this connection by many surgeons. They are efficient in coaptation and inversion but lack hemostatic qualities because they do not compress the edges. The baseball stitch tends to expose some of the mucosa held in its grasp which cannot be inverted properly. Many experienced surgeons attempt to overcome and correct the shortcomings of the continuous suture

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EXTRAPERITONEAL ONE STAGE RESECTION OF THE COLON

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RESECTION of the colon, especially of its left portion, still belongs to the unsolved problems of surgery. By improving the instruments and the technic of suturing and especially by proper choice of patients to be operated on, the mortality of this operation has been reduced from between 50 and 60 per cent, as reported forty years ago, to between 25 and 30 per cent. But even the recent procedures in use are not likely to increase the percentage of favorable results.

All surgeons are agreed that there is an essential difference between the comparatively harmless resection of the right portion of the colon and the dangerous resection of the left portion. In this paper a procedure is described for the hitherto much dreaded resection of the left portion of the colon. This method has only recently been so completely developed that it may be regarded as harmless and able to be generally recommended.

Even when a young surgeon I was impressed by the high mortality following resection of the colon. I then tried to obtain better results by improving the instruments and the technic of the so-called "aseptic suture of the intestine" (1908-1912). Many of the instruments then used by me are now, in a more or less changed form, in use among the surgeons of today. The problem of aseptic operations on the stomach and the intestines was later taken up by Hartert[5] and recently by Starlinger.[14] These authors clamp up a fold of each intestine and suture them together without opening them. The method is satisfactory, but cannot be universally used because the instruments needed are expensive and not all hospitals can afford them.

Besides, experience has taught that, for operations on the stomach and the proximal portion of the intestine, the preventive measures usually resorted to (e. g., tightening with compresses and frequent change of gloves) guarantee good results. When resecting the distal portion of the colon, however, a simple technic cannot prevent peritonitis, as long as one operates with an open peritoneal cavity and, after suturing, reposits the colon.

For postoperative peritonitis is caused not so much by lack of technical skill as by permitting contamination from the intestine. If the anastomosis is effected between the ileum and the colon, the suture is washed by noninfectious contents. But if one creates an anastomosis between two portions of the colon the suture line is invaded by virulent micro-organisms of the colon, and in the case of ulcerated carcinoma mostly by anaerobic organisms. There results first a putrefying necrosis of the borders of the suture of the mucous membrane. Then the infection spreads quickly to the peritoneum. The accuracy of this statement is confirmed by the fact that the results of the resection of the colon are considerably improved whenever a colostomy is done previously. In this way the intestine can be cleared before resection, and the danger of infection is reduced, although not entirely removed. By following this method the most experienced surgeons were able to reduce the mortality to approximately 20 per cent; i. e., every fifth patient died.

This method, recommended by Schloffer,[12] of Prague, has the inconvenience that the patient must be subjected to three operations: (1) colostomy, (2) resection of the colon and (3) closure of tighten at one end while loosening at the other when subjected to unequal pulls or stresses, this cannot happen to the reverse-crossed suture, because each reverse loop defeats this tendency and therefore stabilizes the suture line. This suture cannot be said to be rigid, since there is some degree of slack in the connecting limb of the forward loop, thus allowing for some tissue swelling within the suture unit. Because this suture maintains accurate approximation, induces good hemostasis and minimizes tissue necrosis, there should be a minimum of scar and ring contraction.

TECHNIC IN GASTRO-ENTEROSTOMY

The approximating seromuscular suture used in gastro-enterostomy is my continuous oblique-right angle suture (fig. 2 and fig. 6 *a* and *b*). It is formed by piercing the seromuscular coats of the two viscera in an oblique direction with one thrust—from the operator's side diagonally across to the opposite side. The needle is then brought directly across to the operator's side at a right angle to the suture line and again thrust into the tissues obliquely across the surfaces of both viscera, emerging on the far side. Again the needle crosses to the near side at a right angle, piercing and progressing through the seromuscular coats of both viscera. As the sutures are made, they are tightened. The third stitch is reversed a third to a half suture length and thus forms a figure X, locking the preceding line of suture. The suture is then completed. It appears as an even line without puckerings and with hardly a suggestion of exposed suture material. The distance between sutures is about ⅛ inch (0.3 cm.). The suture line thus produced is essentially similar to that of Cushing's[3] right angle suture, but it is more easily applied, takes less time and produces no puckering. After the incisions are made, the edges are trimmed and the bleeding vessels are ligated. Then the posterior layer of the inner through and through suture is begun by securing and tying the angles at one end of the incised viscera. The needle is advanced the length of a proposed suture unit, piercing the suture line from the operator's side straight through to the opposite side, forming the forward loop. The direction of the suture is then reversed by bringing the needle back to a point close to the tying loop at the beginning of the suture unit, piercing the tissues from the operator's side, the needle emerging directly on the opposite side, where the suture limb is locked under its own loop. This forms the reverse loop. The forward loop of the next suture unit is then formed, and the reverse loop is placed and locked, forming another equally spaced suture unit. The suture is continued by forming similar suture units between forward and reverse loops, the latter being locked (fig. 3). When the angle is reached, it is cleared in the usual way. After clearing the angle, the anterior layer of the through and through suture begins (fig. 4). It is essentially the same stitch as in the posterior layer, but it is placed in an inverted manner with the crosses on the mucosa inside the lumen (fig. 4*c*) and only segments of the loops showing on the serosa aspect. The edges are

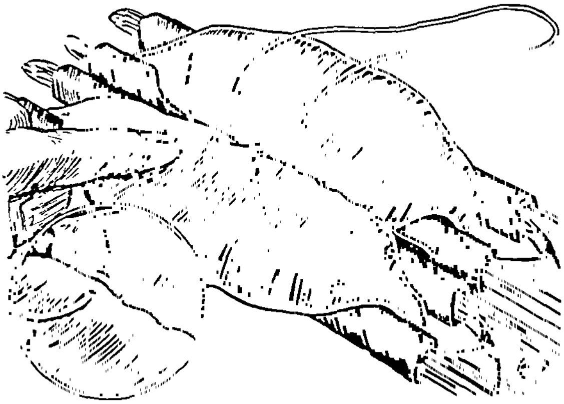

FIG. 2. The continuous oblique-right angle seromuscular suture. The bite of the needle is here exaggerated to show continuity. The insert shows the backstitch used to lock every third stitch.

shotgun." In 1920 I described a procedure which definitely prevents such calamities. But there are other disadvantages. For this reason most surgeons rarely use the so-called two stage resection of von Mikulicz. My expectation that his procedure would be accepted as the only method to be used was not nearly realized.

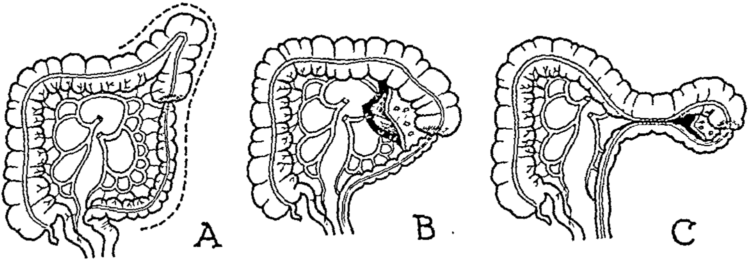

FIG. 1 In *A* the dotted line indicates the extension of detachment in a case of carcinoma coli descendentis. *B* shows the colon and mesocolon detached, with the vessels ligated In *C* a "double-barreled shotgun" has been formed. Note the adjustment of the taeniae.

The most important objection is that the patient for a long time must suffer the disadvantage of the anus praenaturalis, and that this must be closed by a second operation, which is not entirely without danger and is therefore often omitted. I endeavored to limit the time needed for treatment and to make the second operation superfluous (1935, 1936).[6b, c] As the technic of the procedure is not generally known and success depends on the strictest consideration of many particulars, I shall describe the procedure exactly as developed by myself, stressing first the essentials to be observed in the von Mikulicz operation.

VON MIKULICZ PROCEDURE

Detachment of Extensive Portions of the Colon The late Friedrich, of Konigsberg, showed the necessity of resecting not only the diseased portion of the colon, together with its mesocolon, but much greater portions of bowel above and below the tumor This is to be particularly observed in exteriorization of the colon Some authors (Finsterer,[2] Porges[9]) believe that the exteriorization is possible only for the movable portions of the colon, such as the colon transversum and colon sigmoideum. But this opinion is wrong. Every portion of the colon, and therefore, for example, the colon descendens, can be detached from the posterior wall of the abdomen and exteriorized. The blood vessels of the kidney, the spermatic vessels and the ureter must be carefully isolated. Figure 1*A* shows the procedure in one of my latest operations. There was a carcinoma coli descendentis stenosans. The dotted line in the diagram indicates that in such a case the colon must be detached from the middle of the colon transversum and united with the flexura sigmoidea. The ligamenta (gastrocolicum, phrenicocolicum) and the typical lateral adhesions are divided The mesocolon is to be detached far beyond the palpable lymph nodes. The ligature of the corresponding branches of the arteriae mesentericae deprives a large portion of the colon of blood supply, another reason for detaching more distal portions of the colon in order to have at one's disposal a well nourished colon for the anastomosis (fig. 1*B*)

Formation of the Doppelflinte (Double-Barreled Shotgun). Only such parts of the colon as are well supplied with blood are suitable for anastomosis One determines such suitability by slightly scratching the serosa of the colon. A good blood supply is shown by the issuing of light red blood The two segments of intestine must be correctly adjusted, not in an oblique but in a strictly parallel position, and sutured together along the proper line. As early as 1920 I suggested turning the two intestinal segments toward each other so that the portion of the circumference most while the short connecting lines, representing a short length of each loop, should be visible on the serosa aspect. This makes it necessary to place the sutures of the posterior wall of the stoma in a gastro-enterostomy with the crosses showing and the loops behind; while, after turning the corner, the suture is inverted, the crosses being within and under on the mucosa side and the loop lines showing anteriorly on the serosa side. As each loop is placed, it is tightened by the operator with his fingers, as instruments may damage the suture material; the connecting limb is held taut but not very tightly so as to allow a small amount of slack. Inversion is accomplished while tightening loops. The spacing depends on the thickness of the tissues. Ordinarily the suture unit should be about the length of the combined thicknesses of the two edges; the distance between units should be about one fourth the length of a suture unit.

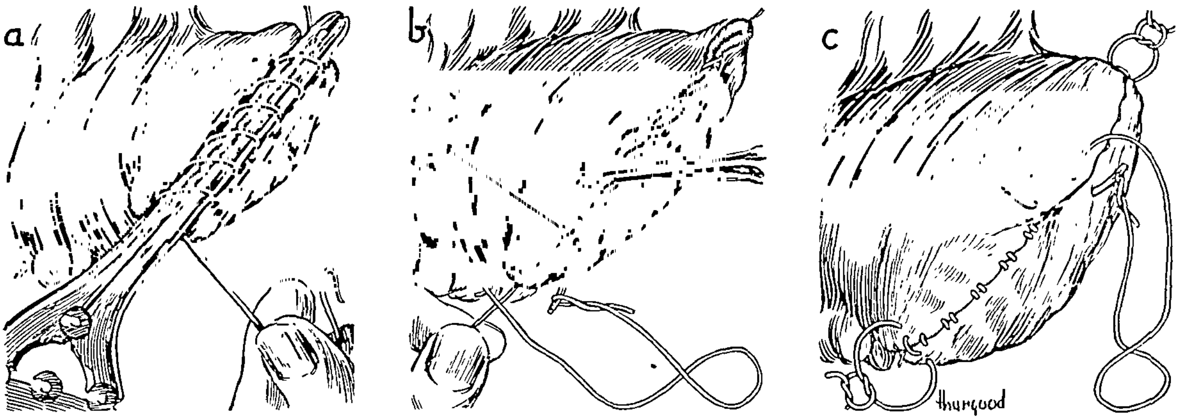

FIG. 6. Closure of duodenal stump. *a,* running suture over the clamp. *b,* the clamp removed, the suture made taut and held as a guide and the inverted reverse-cross stitch being placed over the guide suture. When completed, the respective ends of the two sutures are tied together. *c,* the reverse-crossed through and through suture in place and partly covered by the oblique-right angle seromuscular suture. Corners are reenforced with interrupted Lembert stitches.

OTHER USES AND MODIFICATIONS

A reverse loop may be placed at every third or more stitch in other forms of sero-muscular suture. Figure 5*a* and *b* shows the author's oblique-right angle stitch with the lock; *c* illustrates Lembert's suture with an interval lock.

The inverted reverse-crossed suture may be adopted for the approximation of fascia planes by placing the suture units farther apart (fig. 5*d, c* and *f*). This makes a substantial coaptation, placing the knots and most of the suture material on the under surface of the fascia, where absorption is better and the blood supply richer than in the subcutaneous tissues, lessening the chances for infection from catgut and abscess from stitches.

End-to-end anastomosis may be accomplished by the three section method, the overhand method of suture being used for the first two sections and the inverted method for the last section. Closure of the duodenum (fig. 6) or of any bowel stump or of the sectioned stomach may be done by placing a running suture loosely over the clamp, removing the clamp and making the ends of the running suture taut. (The interior may be explored with the finger before the guide suture is tightened.) This straightened suture is used as a guide, the reverse-crossed suture being placed over it in an inverted manner and followed by a seromuscular line of su-wound permit the crushing of the spur. Within this time the colon is ordinarily emptied from stool by lavage. Tincture of opium is given and the crushing clamp (fig. 3*A*) applied on the spur I introduce a forefinger into each of the two openings of the colon and ascertain by palpation where the two tubes touch most closely Along this line the blades of the clamp are put on in each intestine, then locked together by applying a rubber band on the notches at the handles of the clamp (fig 3*B*). The clamp must be introduced so deeply that later the communication between the two tubes may become sufficiently wide that one need not crush again The effect of the pressure is strongest at the end of the clamp. Here one finds a communication as early as forty-eight to seventy-two hours after operation. Then one inserts an artery forceps through the opening, removes the crushing clamp and introduces a rubber loop through the opening This is bent round the remnants of the spur and tied tightly (fig 3*C*). Within twenty-four hours the spur becomes necrotic and can be cut through with scissors The necrotic borders of the tissue are painted with tincture of iodine. From eight to ten days after the resection there exists a broad communication between the two intestines, and soon stool passes and is expelled per anum

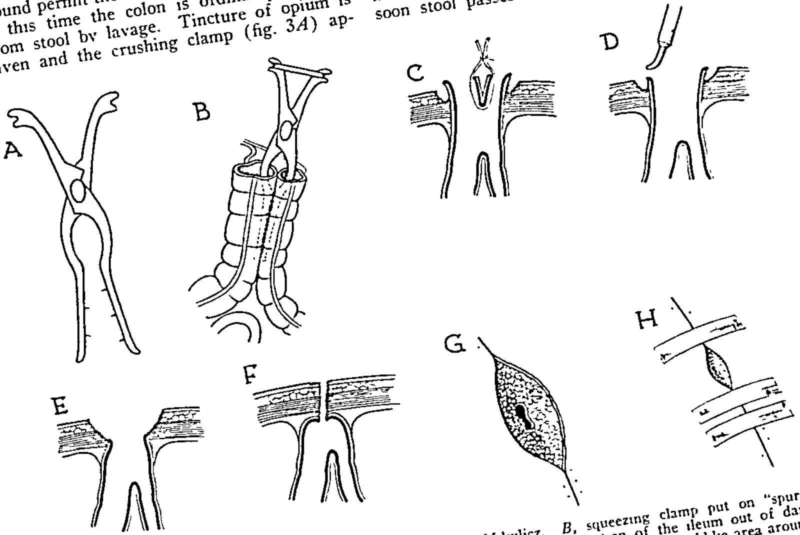

Fig 3 *A*, squeezing clamp of the type used by von Mikulicz. *B*, squeezing clamp put on "spur" Note the averted position of the mesocolon, as well as the neighboring portion of the ileum out of danger C shows the remaining portion of the spur tied with a rubber loop Note the troughlike area around the stoma *D* shows the borders of the mucous membrane being cauterized In *E* the stoma has slipped down, and the peritoneum is secured by adhesions *F* shows the fistula narrowed by shrinking *G*, appearance of the wound after fourteen days; *H*, appearance after twenty-four days.

This event is appreciated by the patient as a symptom of speedy recovery.

Crushing produces no pain on lying down, and I never saw any damage caused by its use

Closure of the Colostoma The patients were usually dismissed from the hospital with the colostoma, and this was not closed until some months later. Every experienced surgeon knows that this second operation means renewed danger for the patient Therefore it is delayed and often omitted There are various procedures used for the closure of the stoma. Some surgeons detach the stoma totally from the integumentum abdominis and suture the two openings together, with an open peritoneal cavity. This, from the technical standpoint, seems to be the best and most exact procedure. But sometimes an infection of the peritoneum occurs, and some patients [illegible] after the second operation.

I therefore have preferred [illegible] toneal closure of the stoma, Nahtlinie, bei der nahezu das ganze Nahtmaterial unter der Oberfläche liegt. Durch Rückknotens jedes dritten Stiches wird die Sicherheit grösser und ebenso die Einfachheit.

RIASSUNTO

Un metodo nuovo per suture gastro-intestinali

L'autore descrive una sutura continua, ritorno-incrociata che è caratterizzata da nodi destri e sinistri alternati. Questa sutura comprende tutta la lunghezza e tutto lo spessore della ferite operatoria con compressione eguale dei margini permettendo cosi un'espansione per la tumefazione dei tessuti. La sutura continua ad angolo retto una sutura seromuscolare di bell'aspetto che è applicata rapidamente e tutto il materiale di sutura è practicalmente coperto della pelle. Annodando ogni terza sutura si aggiunge sicurezza alla semplicità e facilità di applicazione.

SUMARIO

Un método nuevo de sutura gastro-intestinal

La sutura contínua reversa-crusada del autor está caracterizada por la alternación hacia adelante y atras de puntos entrelazados. Este es colocado encima cuando se cose en lado de la mucosa é invertido cuando se cose del lado de la serosa. Este incorpora toda la longitud y espesor de el borde con presión igualada, permitiendo alguna expasión para la inflamación de los tejídos. La sutura continua oblicua-angulo-recto da una costura pareja, facil de aplicar con una sutura sero-muscular en la cual el material queda casi completamente cubierto. Cuando se entrelaza y reversa cada tercer punto, seguridad es añadida á su facilidad y simplicidad de aplicación.

* * *

Dr. R. A. Gutmann, consulting physician for gastro-enterology in **Professor Gosset's** surgical clinic at the Salpêtrière, has solved a method of early diagnosis of carcinoma of the stomach by correlation of clinical study, therapeutic tests and roentgenographic evidence. In his recently published book he reports cases in which the surgeon at operation could palpate nothing abnormal and hardly anything abnormal could be seen on the open viscus by the naked eye, but microscopic examination alone proved the diagnosis. **Professor Gosset** claims in the preface that this work is the first to be published on the initial phases of gastric ulcer.

The Royal College of Surgeons, England, has awarded the John Tomes prize for 1936-1938 to **Dr. Arthur Bullerd,** for his researches into the bacteriology of the mouth. **Professor Ernst W. Hey-Groves** has been appointed Moynihan lecturer for the current year.

At the Milwaukee meeting of the American Neisserian Medical Society, which met in conjunction with the American Association for the Advancement of Science, the Francis Amory research award for 1940 was given to **Dr. P. S. Pelouze,** assistant professor of urology, the University of Pennsylvania School of Medicine.

the most minute attention to details and may impress some, perhaps, as too exacting. For that reason many surgeons prefer the attempt to improve the one stage resection. But, as mentioned before, all such attempts will always be accomplished by a high mortality. Single successful cases must not deceive one. It must be understood that it is not the skill of the surgeon that is relevant; the result depends only on the virulence of the microbes of the colon. This is why one should choose the extraperitoneal procedure, which is painstaking but safe. There will be few fatal events in any series, as these will occur only in the case of patients who are elderly or who are suffering from disease of the heart, kidney or liver. The detachment of large portions of the colon and the extraposition are a severe strain on a weak organism, although one reduces the shock by local anesthesia. In the state of intestinal obstruction, extraposition of the colon is contraindicated.

The technic of thermocauterization to avoid the operative closure of the colostoma was developed by me in four cases. I should like to have reports on this procedure carried out in a large clinic in a larger number of cases

REPORT OF CASES

Case 1. A woman aged 44, whose father had died of carcinoma coli, had always been obstipated and lately had severe colic. On Dec. 25, 1934, there were abdominal pains and retching. The physicians gave morphia and belladonna, without effect. I found visible peristalsis and urged an operation. As the general condition was good, the patient was operated on two hours later, with narcosis induced by ether, a median incision being used. Marked narrowing of the colon descendens by carcinoma was found; the lymph glands were not visible. The colon was detached from the middle of the colon transversum and sutured onto the flexura sigmoidea. A "double-barreled shotgun" was formed, and the colon was extraposed, the integumentum abdominia was sutured, and the colon was resected. The colon was then washed

On December 29 a squeezing clamp was put on the spur. The next day the clamp was removed, and an elastic loop was put on. The following day the spur was gone.

On Jan. 4, 1935, the superfluous portions of the extraposed colon were removed with the Paquelin cautery. On January 8 the borders of the mucosa were cauterized. On January 14 the colostoma was 1 inch (2.54 cm.) wide. A squeezing clamp was put on again. Three days later the clamp had fallen off; cauterization was done.

On February 2 the wound had become very small, and the mucous membrane was no longer visible. On March 10 the fistula was 1/5 inch (0.5 cm.) wide. On March 16 operative closure of the small fistula was carried out, with the area under local anesthesia. The mucous membrane was detached from the skin and twisted down, and the colon was sutured. The layer of fat was sutured, and the skin was stitched up. Healing was per primam intentionem.

On April 5 a radical operation for ventral hernia was done. The patient was dismissed on April 13.

Case 2. A man aged 51 had no stool and no flatulence for three days; there were colic pains, and the abdomen was inflated. During colic, peristalsis of the cecum was visible. X rays showed levels of fluid in the regions of the cecum and flexura lienalis. The general condition was good. Operation was performed at midnight, Dec. 7, 1936. A median incision was made, with etherization. The cecum and colon were inflated to the thickness of a man's arm. The serosa burst alongside the taenia coli ascendentis. No further search for the site of obstruction was made. A fistula was made at the cecum.

On Jan. 14, 1937, x rays showed stenosis of the colon transversum just in front of the flexura lienalis. A second operation was performed, with etherization, with the fistula ceci covered with gauze. An oblique incision was made parallel to the left costal bend. The colon was detached from the middle of the colon transversum and sutured to the flexura sigmoidea. A "double-barreled shotgun" was formed and extraposition carried out.

On January 16 a squeezing clamp was put on the spur. Three days later the clamp was removed, and an elastic loop was laid around the remaining portion of the spur. On January 21 the spur had disappeared. The following day cauterization was carried out and this was repeated on January 28, when there was a stool per anum. On January 30 both the fistula coeci and the fistula transversi were cauterized. On March 11 these fistulas were the stoma of the colon. The procedure is improperly called a three stage resection of the colon. This term is a misnomer, for the actual resection of the colon (i. e., the second of the three operations) is performed in the same manner as the one stage resection of the colon, with the peritoneal cavity open. Thus the patient is still exposed to the danger of peritonitis, in addition to all the inconveniences of a fistula coli lasting many months.

METHODS OF EXTRAPERITONEAL RESECTION

Many unfortunate experiences taught me that real progress was not to be expected until the resection with the open peritoneal cavity could on principle be avoided by procedures in which the detached portion of the colon is exteriorized and resected later on. Such operations were occasionally performed if the patient was very weak and an operation requiring more time seemed too drastic. Studgaard, Bloch, Hahn, and Hochenegg[4] have recorded methods to accomplish this end, but it was von Mikulicz[5] who developed the procedure so completely that it could be recommended as the only and typical operation for carcinoma coli. Von Mikulicz at that time was not aware that similar suggestions had already been made by von Heineke and Paul. A historical survey is to be found in an article by Anschütz (1907).[1]

The essential improvement for which von Mikulicz was responsible is the following: The portion of the colon to be resected is not only placed outside of the abdomen but is also prepared for the anastomosis by suturing together the portions of the colon above and below the stenosis. The result is a double tube, which von Mikulicz called *Doppelflinte* (double-barreled shotgun). The abdominal wall is then tightly closed about the exteriorized colon. This can then be resected presently or later on. There results an anus praeternaturalis with two openings. After some days the partition wall between the two intestines, called by German authors *Sporn* (spur), can be removed by crushing it with a forceps so that the two tubes will be united. There results one opening, which can be closed later.

At the Thirty-first Meeting of the German Society of Surgeons in Berlin in 1902, von Mikulicz reported on sixteen patients so treated, with a mortality of 12.5 per cent, a result more favorable than any achieved up to that time. Before the same society in 1920 I was able to report eight cases of resection of the left portion of the colon, in all of which the operation was accomplished up to the closure of the anus praeternaturalis. One patient died from cardiac failure within the first twenty-four hours after the extraposition.

But not all German surgeons were successful in using the new method. Nordmann,[7] in a very circumspect report on surgery of the colon at the Berlin meeting in 1926, reported on one hundred and forty-four patients operated on according to the method of von Mikulicz (so-called two stage resection of the colon) by different surgeons, with a mortality of 28 per cent. This was just as high a percentage as was then usual with the one stage resection. Nordmann reached the conclusion that the one stage resection of the colon must be regarded then, as before, as the ideal and best method.

Nevertheless I myself continued to use the method of von Mikulicz. In my opinion, many surgeons obtained poor results because they did not perform this procedure* as cautiously as necessary. Especially the crushing of the "spur" seems to be a serious obstacle to many surgeons. Fatal incidents were reported, e. g., the inclusion of a neighboring portion of small intestine or of the mesocolon of the "double-barreled superfluous, as with cauterization of the borders of mucous membrane the fistula quickly narrows and finally closes spontaneously. This occurrence is essentially promoted if, by tamponing the subcutaneous tissue, coalescence between the mucosa of the stoma and the skin is prevented. In the state of intestinal obstruction the resection of the colon with exteriorization is contraindicated.

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* This method has been more exactly described by Anschütz (1907).[1]

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RÉSUMÉ

Résection extra-péritonéale du côlon en un temps

Une méthode de résection, en un temps, du côlon, par voie extra-peritonéale, est décrite. Cette méthode prévient la péritonite si fréquente dans les résections du côlon descendant. Elle est un développement de la méthode de résection du côlon par extériorisation, préconisée par Mikulicz. Cette extériorisation n'est qu'un temps de l'opération. La résection suit immédiatement. L'écrasement de l'éperon en canon de fusil est accompli dans une semaine. Une opération pour fermer la fistule est superflue, car si on cautérise les bords de la muqueuse, la fistule se ferme spontanément en peu de temps. On peut hâter la fermeture en tamponnant le tissu sous-cutané. Dans les cas d'obstruction intestinale, la résection du côlon avec extériorisation est contre-indiquée.

ZUSAMMENFASSUNG

Extraperitoneale einzeitige Resektion des Colon

Eine Methode für die Resektion des Colon wird beschrieben, die (speziell in den gefährlichen Resektionen des linken Colon) durch extraperitonealem Vorgehen einer Peritonitis vorbeugt. Die Methode wurde aus der Miculicz'schen Exteriorisationsresektion des Colon entwickelt; die Resektion ist jedoch nur ein Teil der Operation der kurze Zeit in Anspruch nimmt und sofort von der Resektion gefolgt wird. Eine Operation für die Obliteration des Colostomas ist überflüssig, da nach Kauterisation der Mucosaränder die Fistel kleiner wird und sich schliesslich von selbst schliesst. Die Schliessung wird durch Tamponade beschleunigt. Bei Ileus ist die Exteriorisationsoperation kontraindiziert.

SUMARIO

Resección extraperitoneal del colon en un tiempo

Un método de resección del colon ha sido descrito el cual (especialmente en la resección peligrosa de la porción izquierda) preeviene peritonitis por el procedimiento extraperitoneal. Esta ha sido desarrollada de la resección con exteriorización de Mikulicz, pero exteriorización es solamente parte de la operación, requiriendo solamente un corto tiempo, y la resección sigue inmediatamente. El aplastamiento de el "spur" ó el así llamado escopeta do dos cañones es terminado d [illegible] e la

distal from the mesentery might be sutured. In this way, when, later, the spur is to be crushed, the mesocolon cannot be damaged (fig. 1*C* and 3*B*).

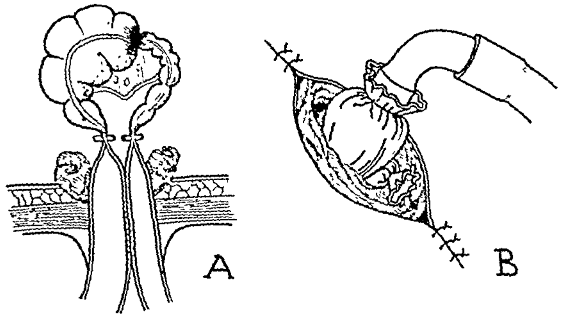

FIG. 2. In *A* the portion of the colon to be resected has been exteriorized, the peritoneum and muscles have been fixed by suture to the intestine, and the subcutaneous tissue has been tamponed. *B* shows the colon resected, the distal opening ligated and a Mixter's glass tube tied into the proximal opening.

It is important to suture the two intestinal segments at a length of at least 3 3/10 inches (10 cm.) in order that the anastomosis may be wide enough and a narrowing by scar shrinkage is rendered impossible. As the forceps is shorter than the suture, it is impossible to involve any portion of intestine near the area of crushing (fig. 3*B*). I recommend wrapping the two intestinal segments in a portion of the omentum, if possible, or, if this is not possible, detaching the borders of the peritoneum and suturing them at the deepest point of the *Doppelflinte* (fig. 2*A*) so that this is located altogether extraperitoneally. An experienced surgeon knows that a gap between the fixed colon and the lateral wall of the abdomen must be avoided. The colon should be attached by some sutures to prevent an incarceration of the ileum.

Figure 2*A* shows a carcinoma lying outside the abdomen, with the double tube within the integumentum abdominis. It is to be emphasized that, as von Mikulicz already has stated, the colon must lie outside the abdomen without any tension.

The edges of the peritoneum and of the muscles must be sutured around and snugly fixed to the extraposed colon, but not too tightly, lest the extraposed intestine be compressed. Formerly I also stitched up the skin, as all surgeons do, with the intention of preventing an infection of subcutaneous tissue and eventually of the peritoneum. But nowadays I suture only the peritoneum and the muscles, and these quite tightly; the skin is sutured only as shown in figure 2*B* All around the extraposed colon the subcutaneous tissue is tamponed with iodoform gauze. Thus coalescence of the skin with the colon is purposely prevented. The reason for this procedure will be explained in the following section.

Resection of the Extraposed Colon Immediately After Closure of the Abdomen. Formerly surgeons did not trouble much about preparing the extraposed colon; they exteriorized it in some way or other and closed the remaining portion of the wound. After some days the extraposed colon became necrotic. Suppuration and stench forced them to resect it. And in some clinics (Porges,[9] Hochenegg,[4] Schmieden,[13] Reichel and Staemmler[10]) the opinion still prevails that the extraposed colon should be cut only after some days, when the peritoneum has joined the colon. But one must remember that the exteriorized portion of the colon is not well nourished and therefore in a state in which putrefactive processes prevail. The patient is thus endangered by resorption of toxins and, I believe, also by the continuous strain on the mesenteries, producing a shock. Suppuration may also spread onto the peritoneum and cause peritonitis. All this can easily be prevented by immediate resection of the colon. At a proper distance from the carcinoma the colon is clamped and cut with the Paquelin cautery. Two openings result. The distal one is instantly ligated; into the proximal opening is fixed a Mixter's glass tube lengthened by a rubber tube so that one can at once empty the colon by lavage. All this can be done without soiling the wound. On the following days also lavage is done. The glass tube holds firmly for three or four days; if necessary, it is tied once more. Von Mikulicz covered the skin suture with zinc ointment. I cover the area surrounding the wound with layers of gauze fixed on the skin with mastisol. The top layers of the gauze are changed whenever necessary; the deeper ones, especially the iodoform gauze, remain undisturbed for some days. When, on the fifth day, one changes the iodoform gauze, one finds the two intestinal tubes surrounded by a trough-like area covered with granulations (fig. 3*G*). This space is washed once a day with solution of hydrogen peroxide and then loosely filled with iodoform gauze. There is only a slight exudation, and one can rely on the peritoneal suture remaining tight by adhesions. These adhesions are supported by the iodoform gauze tampon.

Early Crushing of the Spur. At the clinics of von Mikulicz and Rotter surgeons began to crush the spur after two to three weeks. I endeavor to start this as soon as possible. As early as five days after operation the general condition of the patient and the state of the

OPERATIVE CHOLANGIOGRAPHY

ITS CONTRIBUTION TO THE KNOWLEDGE OF THE PHYSIOPATHOLOGY *OF THE COMMON BILE DUCT*[*]

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At the third Argentine congress of surgery, in Buenos Aires in 1931, I called attention to the advantages of operative cholangiography in revealing the nature of obstruction in and the functional capacity of the bile passages. More recently, in a series of articles, I have reported the results of my study of the physiopathology of the hepatic and common ducts, the diagnosis of their pathologic states and the surgical procedures indicated in disease of the principal excretory duct.

METHOD

The delicacy of the walls of the common bile and hepatic ducts and their propensity to contract in the presence of any irritant, physical or chemical, demand the employment of an appropriate method, such that the factors that might influence the exact interpretation of the functional condition of the excretory passages are reduced to a minimum.

Operative cholangiography as I have developed it suppresses visualization of all foreign bodies in the hepatic and common bile ducts and respects the anatomic integrity of these ducts. Furthermore, slow injection of a small quantity of opaque substance avoids distention of the bile duct branches, and consequently spasmodic phenomena of the papilla are prevented, together with regurgitation along Wirsung's duct. A mechanically forced passage of the flow is also avoided by overflow through the ampulla of Vater.

The substance employed is lipiodol, with which a maximum of detail is obtained and which makes possible in the short time available during operation a study of the evacuation of the hepatic and common bile ducts. The quantity injected is 3 cc., on an average, administered at the rate of 1 cc a minute through the cystic duct with an appropriate cannula the tip of which does not pass Heister's valves, in order that, as much as possible, all excessive pressure may be avoided—an object that can be attained only by extreme caution in view of the low secretory pressure of the biliary network. Naturally, when the injection is made into the gallbladder, 10 cc. of lipiodol is used *after aspirating a similar* quantity of bile.

For the sake of brevity I shall speak, first, of the *physiology of the hepatic duct;* second, of so-called *sphincteritis,* and, third, of *overlooked stones,* on the basis of knowledge gained from the systematic study of 600 cases of gallstones in which operation was performed and in which, without exception, operative cholangiography was practiced.

PHYSIOLOGY OF THE HEPATIC DUCT

The hepatic and common bile ducts, in synergic or antagonistic action with the sphincters, regulate the filling and emptying of the gallbladder so that functionally the main duct is inseparable from the accessory duct. From roentgenographic documentation obtained through operative cholangiography, from the physiologic point of view, the biliary tree is constituted of two excretory systems that act in harmony, thanks to the synergic action, either physiologic or anatomic, of the sphincters; the two systems are the hepatic *system and the gallbladder-common bile* duct system.

The first comprises the hepatic duct, its principal ramifications and the intraglandular branches; it is controlled by *a physiologic sphincter* which exercises its contractile action along the whole length of the hepatic duct.

According to the classic textbooks on physiology, the gallbladder fills passively in the intervals of digestion, owing to a temporary closing of the scribed my method. But, as the adhesive quality of the serosa is lacking with this method, the suture, even when made in three layers, is not entirely reliable. A fistula often develops, which, however, regularly closes by itself after some days.

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[*] Read at the International Assembly of the International College of Surgeons, New York, May 22, 1939.

AUTHOR'S OPERATION

Up to this point I have described all the particulars which, it seems to me, are essential in an exactly performed von Mikulicz operation. Now I shall state my own procedure, which is intended to make the operative closure of the stoma superfluous.

As I have shown in 1935 and 1936,[6b, c] the everted borders of the mucous membrane shrink and become inverted when cauterized with the Paquelin cautery (fig. 3*D*).† One starts cauterization as early as possible, on the average, a fortnight after resection. The patients leave the hospital with the stoma shrinking. Once a week they come to the polyclinic service, and on that occasion the borders of the mucosa are cauterized again. Soon the stoma becomes so narrow that a finger can scarcely be introduced. I was struck by the observation that the shrinking of the stoma was more rapid at the beginning, as long as the mucosa had not yet grown together with the skin. When, later on, the stoma was surrounded by callous skin borders, the shrinking became slower.‡ I determined to prevent the coalescence of the mucosa with the skin in the next case by tamponade of the subcutaneous tissue (fig. 2). The effect of this measure was astonishing. Ten days after the resection of the exteriorized colon, when the spur was already removed, the stoma, obviously drawn by the mesentery, sank into the depth of the wound (fig. 3*C*, *D* and *E*). Fourteen days after resection the wound resembled that shown in figure 3*G*. At the bottom of a granulating funnel was to be seen a narrow opening of the colon. As soon as an ectropion of the mucosa was formed, the edges of the mucosa were cauterized. The fistula coli became quickly smaller and at last closed by itself (figs. 3*F* and *H*). The rapidity of this occurrence was surprising. On the twenty-fourth day after operation a finger could scarcely be introduced; a month later, a stick of silver nitrate just passed through. Within another month the fistula had closed. The treatment of such fistulae coli is, of course, difficult. One can promote spontaneous closure by cauterization with the Paquelin cautery, with the area under local anesthesia. The following regimen is helpful: One begins with thorough purgation. Then one prescribes a liquid diet (soup, tea, coffee with whipped cream, lemonade with much sugar) for three or four days and then a pap diet (rice, porridge, eggs, minced ham, toast, butter) for a week. Fruit, jam and vegetables are forbidden. This regimen can, after an intercalation of a normal diet for a week, be repeated, if necessary. The patients willingly take to this drastic diet, as they feel their fistulas rapidly becoming dry and smaller.

Comment. The procedure just described represents a modified method of resection of the colon with extraposition. The time required for the exteriorization itself has been reduced to a fraction of the time needed with other methods, as the exteriorized colon is immediately resected. Thus one can hardly call this a "resection with extraposition" any longer. Neither is the usual term "two stage resection of the colon" adequate, because the closure of the stoma has been made superfluous by cauterizing the edges of the mucosa. One can speak of only one operation. The crushing of the spur and the thermocauterization are special features of after-treatment. This, then, entitles one to speak of the procedure as an "extraperitoneal one stage resection of the colon."

As the resection itself is made entirely extraperitoneal, the danger of the operation is reduced to a minimum. By the rapid succession of the crushing of the spur and the cauterization the period of after-treatment is greatly reduced. The patient need stay in the hospital only from fourteen to sixteen days; the rest of the treatment is ambulatory. After two months the fistula coli hardly incommodes the patient, because it has dwindled to almost nothing.

The method here described requires

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† The diathermic cauterizer has not the same effect.

‡ My case 3 was very instructive. The patient had been operated on by another surgeon four months previously. He resected a portion of the colon sigmoideum by extraposition but had not closed the two openings of the colostoma. I crushed the spur and tried my method of cauterization. But the mucous membrane did not shrink until I detached it from the skin with the scalpel.

pare the dyskinesis to the dysthyroidism of these upholding the dual theory, and stenosing odditis in its initial stage to the hyperthyroidism. The first is a disturbance of function, the second an increase of the same.

The name *stenosing odditis* remains for all those resistant papillas, without specifying, naturally, the factors that intervene to create the more or less permanent obstruction at the level of Oddi's sphincter.

I have documentation of 600 cases, which furnish irrefutable proof by means of operative cholangeitis that dyskinesis and stenosing odditis really exist. As a matter of fact, according to my experience, some painful sequelae of cholecystectomy are closely connected with dyskinesis and stenosing odditis. Some patients in whom the gallbladder was removed and the abdominal wall closed without drainage have returned complaining of painful attacks, beginning immediately after operation. The symptoms were similar to those of so-called hepatic colic. Examination of the roentgenograms obtained during the operation demonstrated conclusively a sluggish evacuation of the common bile duct, due to a certain degree of resistance of the sphincter of Oddi. It is right to infer that in those patients with an excretory system that is not adaptable the suppression of a slightly altered gallbladder may increase the painful attacks. These facts prove that the bile retention is sometimes the main cause of the attacks before and after cholecystectomy. This explains the improvement experienced after medical drainage of the bile duct, and the recurrence observed when such patients are given substances provoking spasm of the sphincter of Oddi. This statement is also supported by the dilatation of the stump of the cystic duct, observed in certain cases in which a second operation was performed after cholecystectomy.

OVERLOOKED STONES

Operative cholangiography gives precise information in the field of overlooked stones.

Choledochostomy, followed by instrumental exploration, has been advocated in its place. It is clear that choledochostomy does not lead to ill effects when the duct is of greater diameter than normal; but incision of a normal duct is more serious in that it may lead to stenosis.

The choledochostomy should be done when the hepatic duct has thickened walls and is dilated, and if the bile withdrawn by previous puncture contains particles in suspension. According to my experience, it is not always possible to be sure of the diameter and thickness of the duct; it is also a fact that sometimes a small stone can be discovered at the lower third or in the papilla and yet in association with a thin-walled duct, and even with a transparent bile content.

The importance of operative cholangiography in the recognition of common bile duct stones is indisputable. One of the outstanding facts is constituted by the comparison of the percentage figures before and after the systematic employment of this procedure; my statistics obtained with the exclusive employment of the palpation, choledochostomy and instrumental exploration varied around 12 per cent; at present, with the use of operative cholangiography the percentage has reached 24. This is probably the highest percentage recorded at present. In addition, by personal inquiry among those most experienced in biliary tract surgery, I have been able to prove that the highest percentages are obtained by those surgeons who have incorporated operative cholangiography as an exploratory procedure.

I believe therefore that operative cholangiography should be associated with the other resources employed du[illegible]e operation.

fairly narrow, and by April 11 the fistula coeci had closed by itself.

The patient carried on his business and had no trouble with his small fistula, and only as late as Aug. 4, 1938, could be induced to have the fistula closed by suture, with the area under local anesthesia.

CASE 3. A woman aged 62 had been operated on four months previously by another surgeon on account of carcinoma flexurae sigmoideae, with extraposition of the colon. The "double-barreled shotgun" was incompletely formed: The two tubes were not parallel. At the patient's request I started preliminary measures for closing the anus praeternaturalis. This procedure was hampered by the adiposity of the patient, a hernia ventralis about the anus praeternaturalis, and the aforementioned oblique position of the two tubes of the intestines.

On April 25, 1938, a squeezing clamp was put on the spur, and this clamp was removed on April 29. On May 7 the colostoma was wide (measuring from 3 to 3½ inches [7.6 to 8.9 cm.]). Cauterization was done. On May 28 repeated cauterizations were carried out, without effect, as coalescence with the skin had proceeded too far. I determined to detach the mucous membrane from the skin, with the area under local anesthesia. After detachment, the mucous membrane and skin were sutured separately, by which procedure the aperture of the stoma was narrowed to 2 inches (5.08 cm.).

On June 24, after repeated cauterization, the stoma was narrowed to 1½ inches (3.8 cm.), but a new spur had lately arisen, due to shrinking of the scar. A squeezing clamp was put on in a different direction. By June 27 this had fallen off. By July 27, after repeated cauterizations, the fistula had shrunk to 7/10 inches (1.8 cm.), and by August 15 to 3/10 inches (0.8 cm.). On the latter date it was *closed by suture, with the area under local anesthesia.* The skin stitches were removed on August 24, and there was a stool per anum. On August 30 a small fistula intestini had formed. Laxatives and a liquid diet were prescribed. By September 15 the fistula had spontaneously closed.

CASE 4. A woman aged 62 had been treated for colitis for one and one-half years, with an apple diet. There had been no stool for a week. The abdomen was inflated, and there was a distinct peristalsis in the region corresponding to that of the colon ascendens and the colon transversum. Rectoscopy showed 8 inches (20.3 cm.) in a normal state. An x ray showed the barium clyster filling the colon up to the middle of the colon descendens. The general condition was good. Operation was indicated.

On May 14, 1938, with the area under local anesthesia, combined with etherization for some minutes, an oblique incision was made parallel to the left costal bend. The colon descendens was much narrowed by carcinoma, and there were several hard lymph glands in the mesocolon. The colon was detached from the middle of the colon transversum and sutured to the flexura sigmoidea, with formation of a "double-barreled shotgun," extraposition and suture of the integumentum abdominis, *excepting the skin.* The subcutaneous tissue was first tamponed with iodoform gauze. The extraposed colon was resected, and Mixter's glass tube was introduced. Immediate intestinal washing removed masses of thickened stool. Washing was carried out once a day on May 15, 16 and 17.

On May 18 tinctura opii was given, and the iodoform gauze was changed. On May 19 a squeezing clamp was put on the spur. This was removed two days later, and an elastic loop was adjusted. By May 22 the spur was gone, and there was a stool per anum. On May 26 the patient left her bed.

On May 30 the borders of mucosa were cauterized at the bottom of the funnel (fig. 3*D*). The patient left the hospital on June 7, with the wound considerably reduced under strips of adhesive plaster (fig. 3*H*). The fistula coli offered passage for one finger only. On June 22 cauterization was done once more. On July 26 the fistula just allowed passage of a stick of silver nitrate, and by August 8 it had spontaneously closed.

SUMMARY AND CONCLUSIONS

A method of resection of the colon has been described which (especially in the dangerous resections of the left portion of the colon) prevents peritonitis by the extraperitoneal procedure. It has been developed from von Mikulicz' procedure of resection of the colon with exteriorization, but differs from it in essential points. Extraposition is only part of the operation, requiring but a short time, and the resection follows immediately. The crushing of the spur of the so-called "double-barreled shotgun" is finished within the first week.

With this method an operation for closure of the stoma of the colon is

RIASSUNTO

Colangiografia operativa

Sulla scorta di 600 casi nei quali questo metodo fù applicato l'autore conclude che la colangiografia operatoria con lipiodol è di gran valore nella rivelazione della natura di ostruzioni e della capacità funzionale dei condotti bileari.

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FELLOWSHIP DUES, AS WELL AS DUES FOR MEMBERSHIP AND ASSOCIATE MEMBERSHIP, ARE PAYABLE NOW AND SHOULD BE SENT TO DR. BENJAMIN I. GOLDEN, DAVIS MEMORIAL HOSPITAL, ELKINS, W. VA.

NOTICE: — THOSE INTENDING TO PARTICIPATE IN THE SCIENTIFIC PROGRAM AT THE NATIONAL MEETING OF THE UNITED STATES CHAPTER OF THE INTERNATIONAL COLLEGE OF SURGEONS IN VENICE, FLORIDA, KINDLY COMMUNICATE PROMPTLY WITH DR. FREDERICK M. DOUGLASS, 421 MICHIGAN STREET, TOLEDO, OHIO, OR WITH DR. FRED H. ALBEE, 57 WEST 57TH STREET, NEW YORK CITY.

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mera semana. Una operación para el cierre de el colóstoma es superflua, pues cauterización de los bordes de la membrana mucosa estrecha la fístula con rapidez y finalmente la cierra expontaneamente. Este cierre es ayudado cuando se tapóna con gaza el espacio entre la membrana mucosa y el tejído subcutaneo evitando la coalescencia de la piel al colon. En los casos de obstrucción intestinal la resección del colon con exteriorización está contraindicada.

RIASSUNTO

Resezione extraperitoneale del colon in un tempo

Un metodo di resezione del colon è stato descritto, che (specialmente nelle resezioni pericolose del colon sinistro) previene peritonite mediante un metodo extraperitoneale. Questo metodo è stato sviluppato dalla resezione extraperitoneale del colon di Miculicz, ma la esteriorizzazione è soltanto una parte dell'operazione inquantoche impiega soltanto poco tempo ed è seguita immediatamente dalla resezione. Un'operazione per chiudere il colostoma è superflua, perche la fistula si rimpiccolisce rapidamente e finalmente si chiude spontaneamente dopo cauterizazione delle margini della mucosa. La chiusura viene accelerata coll'uso di tamponi. In casi di ostruzione intestinale la resezione del colon con esteriorizazione è controindicata.

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The Committee on Scientific Research of the American Medical Association has made grants to **Dr. Felix Saunders,** of the University of Chicago, for the continuation of studies on growth factors for bacteria; to **Drs. Hugh J. Morgan** and **George P. Vryonis,** of the School of Medicine of Vanderbilt University, for the study of bacterial infections in the chick embryo; to **Dr. William C. Langston** and **Dr. Paul L. Day,** of the School of Medicine of the University of Arkansas, to be used in their experiments on nutritional cytopenia in the monkey, and to **Dr. Marion Fay,** professor of physiological chemistry at the Woman's Medical College of Pennsylvania, for a continuation of experiments on the physiologic effects of strontium.

The Casselberry Prize of the American Laryngological Association, amounting to $500, has been divided between **Dr. Brien T. King,** of Seattle, for his operation to relieve abductor paralysis by use of the omohyoid muscle, and **Dr. Hermon Marshall Taylor,** of Jacksonville, Fla., for his film study of the hygiene of swimming.

The American Radium Society awarded its Janeway Medal for 1939 to **Gioacchino Failla, Sc.D.,** physicist to Memorial Hospital for the Treatment of Cancer and Allied Diseases, New York, at the annual meeting in St. Louis on May 15. **Dr. Failla** was at the time associated with Dr. Henry H. Janeway, for whom the medal is named.

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face the north, as this orientation afforded the best daylight. Today, with the efficient artificial lighting equipment available, orientation is of little importance and dependence for illumination is placed on artificial lighting. Likewise, the old skylights, which made many operating rooms almost uninhabitable during the summer months and ruined the architectural lines of the structure, have become passé and are either entirely omitted or carefully shaded. It is not unusual to find operating rooms entirely without windows, or with the window space filled in with glass brick. It is still desirable to locate the operating suite on an upper floor, and preferably on the top floor, in order to decrease traffic through it.

NUMBER OF OPERATING ROOMS

The extraordinary expense involved in building and equipping operating rooms demands the most careful estimation of the number of such rooms required. An excess of such facilities incurs a heavy overhead expense, while, on the other hand, inadequate operating facilities handicap the surgeons, increase the difficulties of the nursing staff and militate against the maintenance of aseptic technic.

The determination, then, of the number of operating rooms to be provided in a given hospital project is dependent on such factors as the qualifications of the staff, the proportion of surgical cases to be treated, the bed capacity, an anticipated rate of bed utilization, the number of days of hospitalization and the number of operations that can be performed in one operating room daily. With calculations based on a one hundred bed hospital used to 82 per cent of its capacity and each patient using a bed for twelve days, with half the patients surgical, the surgeons operating three hundred days in a year and using the operating room for two patients a day, that institution would require two operating rooms with all the other facilities ordinarily included in an operating suite and, in addition, an emergency operating room in the casualty section.

For a two hundred bed general hospital of the same type there would be required four operating rooms, for a three hundred bed hospital six, for a four hundred bed hospital eight, and on up to the eight hundred bed hospital requiring sixteen operating rooms. As may well be realized, any change in the basic factors will alter the requirements, but for general purposes this method of estimating needs for operating facilities will serve as a reasonable approach to the final decision which, in every instance, must be based on known requirements.

SPECIAL OPERATING ROOMS

There is a strong tendency on the part of certain specialists to demand separate operating rooms, sometimes entirely detached from the surgical suite, and also to request that these rooms be used exclusively for one specialty. With respect to the detachment of operating rooms for any particular specialty from the operating suite, it is submitted that such separation interferes with nursing supervision, complicates efficient planning, and unjustifiably increases its cost; it separates those surgeons from their colleagues, and unduly raises the expense of maintenance.

Specially equipped operating rooms for urology, orthopedics, brain surgery, and eye, ear, nose and throat surgery are, of course, necessary, and every effort is made to meet the requirement for these specialties. For example, radiologic facilities are provided for urology and orthopedics, and piped sterile water for urology. Viewing boxes for radiography, warming cabinets for parenteral solutions, vacuum apparatus and special lighting fixtures are placed in every operating room. For the orthopedic room, space and facilities are provided for plaster and splint work and for the storage of the orthopedic table sphincter of Oddi. The biliary tract, when it reaches its maximum capacity, passes its contents again passively into the gallbladder. When investigated by operative cholangiography, the process appears entirely different. Roentgenographic studies during and immediately after the operation show that, when there is an incomplete obstruction, the biliary tree empties the remains of the lipiodol *actively* through the cysticoduodenostomy opening already formed.

Authors who have dealt with the physiology of the sphincters of the biliary tree limit themselves to the papilla of Vater and the neck of the gallbladder, the two points which seem to control the outlet and inlet of the bile in normal cases. No one, however, has mentioned the *contraction of the hepatic duct*. According to my observations in the great number of cases that I have studied, principally when there is some resistance to evacuation in the common duct at Oddi's sphincter, the lipiodol is stopped by the contraction of the hepatic duct, which appears as a threadlike stricture or is otherwise considerably reduced in diameter. In the intervals of digestion when the sphincter of Oddi is closed, it is reasonable to suppose that, by active contractions, the common duct causes the bile to ascend; the movement is limited by the hepatic duct's contraction, and the bile is forced into the gallbladder, where it is stored and concentrated. The hepatic duct may have the same function during the emptying of the gallbladder.

As a matter of fact, one is allowed to suppose that, if the hepatic duct, according to recent anatomic researches, does not have a real sphincter, it acts as one from a physiologic point of view. It is a *protective mechanism,* which should be respected, while performing choledochostomy or creating any kind of anastomosis between the common bile duct and the duodenum.

SPHINCTERITIS

Generic terms to designate disturbances at the level of the sphincter of Oddi are legion, so much so that it is no exaggeration to qualify this state as anarchic, this being explained partly by the existing discrepancy regarding the etiopathology.

The following designations can be found: spastic cholepathy (Schmieden and Niessen), biliary dyskinesis (Ivy and Sandblom), biliary disgynergia (Best and Hicken), papillitis, sphincteritis (Walker and Thiessen), resistance of the papilla of Vater, schlero-retractile choledocho-odditis (Del Valle). In the midst of so much confusion, any extreme position taken up sins either from omission or from excess.

I have endeavored to take into account all the points of view, uniting under the name "odditis" the obstructive phenomena, although this does not seem to be the ideal designation. Odditis is subdivided into dyskinetic and stenosing odditis.

Dyskinesis, an expression of disturbed function, to my mind, is best evidenced by the partial contraction of the sphincter, brought about at its distal sympathicotropic portion. It is precisely this disturbed function that is the cause of *reflux along Wirsung's duct.* Sometimes it is possible during the operation to detect a total contraction of the sphincter, followed some minutes afterward by its partial opening with reflux along Wirsung's duct; in other cases the latter is filled almost immediately. This proves that no mechanical factor plays any part in the reflux along Wirsung's duct. Obviously, according to this conception of dysfunction, the same phenomena must occur in a greater number of cases than those that are made evident by operative cholangiography; the two ducts do not open at the ampulla of Vater in every case, and the phenomena may occur at any other time apart from the operation. I com-of illumination, it involves a rather high original cost, requires constant attention and consumes an enormous amount of current.

In all cases general illumination is required in addition to the special lighting, which may be of the direct type with a diffusing globe. There should also be a portable spotlight, preferably of the independent battery type with trickle charger, in every operating room for emergency use.

COLOR SCHEME

The object of using color in an operating room is to decrease glare and to create the best conditions for visual accommodation. Glare not only decreases visability, but causes discomfort, eyestrain disorders and is distracting. To overcome the glare of bright walls in the visual field of the surgeon, various colors have been used not only for walls but for sheets and drapes used in the operating field. Wall surfaces and surroundings act as light reflectors when white or as light absorbents when dark, and in the operating room the two extremes must be avoided. The reflecting power of color runs from about 87 per cent for milk-white to 10 per cent for black, and so a shade ranging midway between the two is indicated. A dull French green or gray-green for the wainscoting extending to a height of about 7 feet (2.1 meters) with a lighter gray-green above has given great satisfaction, but a sky-blue wainscot has been used with equal effectiveness. A gray tile floor will add considerably to the eye comfort and visual acuity of the surgeon.

AIR CONDITIONING

The aims in applying air conditioning to surgical suites may be briefly stated as follows: (*a*) maintenance of temperature most conducive to the welfare of the patient; (*b*) a degree of relative humidity sufficient to combat static electricity; (*c*) the purification of the air by washing, filtering and circulation. Regardless of the outside temperature, the lowest level for an operating room is about 80 F., and the temperature should not be permitted to rise much above 90 F. With respect to relative humidity, if woolen or silk materials are excluded from the operating rooms and other precautions are taken against explosions, 55 per cent will meet the requirements.

It has been shown by Hart[2] that pathogenic bacteria, predominately staphylococci, are present in untreated air in the operating room, and various measures have been used to free the air of bacteria, among which may be mentioned the following: the application of bactericidal radiant energy in the region of the operative incision and the supply table; the same treatment of the air in its passage into the room; the treatment of the intake air by electrical precipitation, and, finally, the washing and filtering of the intake air without other treatment. We believe it is more practical to utilize the latter method while adopting a type of surgical mask which will control as well as restrict the contamination of the atmosphere of the operating room by doctors and nurses through the use of disposable, tight-fitting face masks of material capable of filtering out the bacteria, as proposed by Arnold.[1]

EXPLOSION HAZARDS

Owing to the more extensive use of high explosive or inflammable gases in anesthesia, the explosion hazards have become so great as to require the most extraordinary precautions to avert them. Explosion results from the combination of : (1) an inflammable gas, vapor or other substance; (2) oxygen (either pure or in the air), or a gas or other substance which provides oxygen (such as nitrous oxide), and (3) a source of ignition in a dry atmosphere. These factors suggest the fundamentals in all precautionary measures, viz.: (*a*)

SUMMARY

On the basis of the results obtained in 600 cases in which operative cholangiography was used, the author concludes that this procedure, with the use of lipiodol, is of value in revealing the nature of obstruction in and the functional capacity of the bile passages.

DISCUSSION

Dr. Moses Behrend, Philadelphia: Surgeons throughout the world ought to extend to Dr. Mirizzi a vote of thanks for bringing cholangiography to the front in the diagnosis of stones that have been left in the common duct. He should also be thanked for the beautiful demonstration concerning the narrowing of the prostatic duct and what may result as a consequence.

I should like to know whether Dr. Mirizzi uses cholangiography after operations on the common duct, when the T-tube is still in place. I have preferred this tube to a straight tube placed in the common duct, during a cholangiography. I expect to speak on the subject in this city within ten days. I have done 124 operations for obstruction of the common duct due to stones that were originally in the common duct and stones that were left at the time an operation had been performed.

My associates and I have used cholangiography in all cases, whether the operation was done for stones or for a malignant growth, and we have learned a great deal, but a hospital must be properly equipped for doing cholangiography at the time of operation. After the operation and when the tube is still in place one can take the patient to the x-ray room, but if one has not the equipment in the operating room it is well nigh impossible to use cholangiography.

Dr. Frederick M. Douglass, Toledo, Ohio: I should like to emphasize the postoperative results, and I should like to ask Dr. Mirizzi to tell us his experience in that group of patients who show large dilatation of the biliary tree. The history in these cases is always one of long standing, and this means infection in the liver. Unless the common duct is drained again and again over a long period, the final results will not be good. The dilatation diminishes as the infection recedes, and that is the point I should like to emphasize.

Dr. T. F. McCarthy, Lincoln, Neb.: What is the mortality in these cases? I am speaking of recovery from infections of the gallbladder tree and how many cases one finds after the gallbladder has been excised. Does one find such cases more commonly when it has been excised or when it has been drained?

It has been my observation that many times infections in the biliary tree occur after removal of the gallbladder. Infections of the liver occur when the bile does not have an outlet. By this I mean that a gallbladder much inflamed is often excised when possibly drainage is preferable.

Dr. P. L. Mirizzi, Córdoba, Argentina: I have performed 600 such procedures, with success in all. Sometimes in dissecting ducts I have had some difficulty, but if one goes from the wall of the gallbladder to the cystic duct, one comes to the common bile duct. It is often difficult to see this. In exceptional cases one has to perform the injection into the common bile duct.

RÉSUMÉ

La cholangiographie opératoire

Se basant sur les résultats obtenus dans 600 cas de cholangiographie opératoire, l'auteur conclue que cet procédé, avec l'emploi du lipiodol, révèle la nature de l'obstruction dans et la capacité fonctionnelle des conduits biliaires.

ZUSAMMENFASSUNG

Operative Cholangiographie

Der Autor kommt auf Grund der Resultate von 600 Fällen zu der Anschauung, dass diese Methode bei der Anwendung von Lipiodol von grossen Werte für die Entdeckung von Obstruktionen in den Gallengängen und deren funktionellen Kapazität ist.

SUMARIO

Colangiografía operatíva

Basandose en los resultados obtenidos en 600 casos en los cuales colangiografía operatíva fué hecha, el autor concluye que éste procedimiento con el uso de lipiodol, es de valor para revelar la naturaleza de la obstrucción en la capacidad funcional de pase de la bilis.

paratus, danger from explosion can be minimized.

7. The concentration of a large number of different explosive gases in the small area of a tank room constitutes a dangerous hazard unwarranted under the circumstances.

SURGERY FLOORS

From the standpoint of the comfort of those working in operating rooms, a rubber floor would be preferable because of its resiliency, but the maintenance of such a floor in the presence of so much moisture presents a difficult problem. All things considered, our preference is for a terrazzo floor, and it has been the practice to lay this floor with copper strips in small squares so designed that the entire floor may be grounded. At this time, however, the efficacy of grounding is controversial, and it must be admitted that unless all equipment and parts thereof and all persons are fully and properly grounded, which is difficult to accomplish, marked differences of static potential will result which may, in some instances, be more dangerous than with no grounding. Under existing circumstances we are inclined to eliminate floor grounding when adequate humidity can be provided, but to advise grounding as the lesser of two hazards when humidity cannot be depended on.

BLANKET WARMER CABINETS

It has been stated previously that blankets with a high wool content generate static electricity and therefore should be excluded from the operating suite. But blankets are required, and a good cotton flannel blanket properly warmed will meet the needs. The heating of the blankets may best be accomplished by providing built-in heated cabinets readily accessible to the operating rooms.

TELEPHONES AND COMMUNICATION SYSTEM

A telephone is required in the surgeons' dressing room, and we have found it advantageous to connect the dressing room, the anesthetist's office and the supervisor's desk by loudspeaking apparatus so that a surgeon or anesthetist may be quickly called when needed. As occasions arise when a surgeon is obliged to use a telephone after he is scrubbed up, the location of telephones close to operating rooms is a great convenience.

Whatever doctors' calling system is used for the hospital should be extended to the surgical suite, and it will be a convenience if a signal panel is placed in the surgeons' dressing room.

ELEVATORS

The properly designed surgical suite will have direct access to one or more elevators so that stretcher patients may be unloaded into the suite without passing through outside corridors. Needless to say, the elevators must be not less than 8 feet and 4 inches (2.5 meters) in depth and 5 feet and 8 inches (1.5 meter) wide, the doors opening to a degree sufficient to permit the passage of a standard bed.

PLUMBING FIXTURES

The technic of an operating suite has often been adversely affected by the use of unsuitable plumbing fixtures, so that these always demand professional approval. Scrub-up sinks must be deep enough so that running water will not splash; water control should be by either knee or elbow, as preferred, our experience with foot valves being very unfavorable. Faucets of the goose neck, spray type seem to be preferred; the mobile type of liquid soap dispensers with foot control are much more satisfactory than any built-in system that cannot be thoroughly cleaned at frequent intervals. Neither scrub-up nor clinic sinks should be placed within an operating room.

We consider it an advantage to provide a drain in the center of each operating room, properly t [illegible] l, s [illegible] t the

PLANNING THE SURGICAL DEPARTMENT OF THE MODERN HOSPITAL*

WILLIAM HENRY WALSH, M.D., F.A.C.P.

CHICAGO

STRANGE as it may seem, the surgeons, who are most concerned with the functional efficiency of the surgical facilities in a hospital, are too often not consulted about the planning of operating rooms until the design has reached a stage where changes cannot be readily made. This is unfortunate, since, in our experience, the ideas of surgeons have proved exceedingly valuable and are responsible for some of the most advanced improvements in design and equipment. The operating suite is the workshop of the surgeon, designed to meet his reasonable requirements, and should not be considered, as it too frequently is, a showroom of architectural and engineering endeavor.

On the other hand, those of us who have devoted many years to the study of hospital planning and who are intimately acquainted with surgical methods and procedures are occasionally confronted with the surgeon of the prima donna type, so deeply interested in his own particular specialty as to completely ignore the existence of any other or the desirability of coordinating his particular needs with those of his colleagues. To accede to the wishes of such an individual would subordinate the functional efficiency of the whole institution to his own unreasonable demands, and some of the freakish operating suites encountered in certain hospitals offer evidence of the power exerted by such persons.

In modern planning, therefore, we endeavor to avoid these two extremes and, after the space to be allotted has been determined, the surgeons concerned are consulted, and they are afforded the widest latitude in effecting such changes in design, articulation and equipment as appear to be practical and feasible.

In addition to the operating rooms required on the operating room floor, the surgical department is also particularly concerned with the casualty section, orthopedic and splint shops, the sterilizing facilities, the central service for surgical trays and finally the provision of beds to accommodate the various economic and clinical groups. At this time, however,we shall confine our remarks principally to the design and mechanical equipment of the operating rooms.

It has often been said that a good surgeon with adequate assistance may be able to accomplish excellent work under the most adverse physical conditions; however, it is generally agreed that it is to the advantage of all concerned to have the surgical suite so designed that exact technic may be facilitated, functional efficiency assured and precision equipment made readily available.

While certain features in the design of operating suites may be standardized, the difference of technic and requirements of groups of surgeons in different geographic areas make it impossible to design a single surgical suite that will suit all hospitals, thus emphasizing the need for studying the specific requirements of each institution and incorporating such local variants as may be necessary to meet the requirements of those who are to work therein.

LOCATION OF THE SURGICAL SUITE

In times past, it was considered necessary for the operating rooms to

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*Read at the International Scientific Assembly of the International College of Surgeons, New York, May 23, 1939.

siderable number of emergency cases are not surgical, but because of the predominately surgical aspect of this service, it is usually considered expedient to staff the department with surgically trained personnel.

SUMMARY AND CONCLUSIONS

It is in the surgical suite of the hospital perhaps more than in any other, where death is constantly lurking and where judgments on which life and death hang in the balance must be made with rapidity and precision. Any aid, therefore, that can be furnished the surgeon, with respect to physical conditions or equipment, that may contribute to the perfection of scientific accomplishment should be promptly made available to the end that he shall have at his command every known facility in his laudable efforts to save life.

On the other hand, the surgeons, as well as all others concerned with the cost of medical care, must use every influence to stop the unnecessary extravagance in hospital planning, encourage intelligent efforts to decrease costs and adopt economies which do not adversely affect functional efficiency.

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DISCUSSION

Dr R W. McNealy, Chicago. Having been confronted with many of these questions during the past three years, in contemplation of the new hospital in Chicago, I am conscious of many of the problems which Dr Walsh has presented. I should like to suggest that any one who contemplates building a surgical unit had better have an intimate knowledge of all the details, before the architect gets too firmly established in his plans. I have heard that those Mexican burros are hard to change in any direction, but I believe that architects are even harder to dissuade!

The first question I wish to discuss is that of light in the operating room. This has caused us more worry than any other one thing. The old hanging lamps, such as were illustrated in Dr. Walsh's slide, are typical of what has been suggested to us as lighting equipment. I am rather definitely opposed to hanging fixtures from the ceiling. They accumulate a great deal of dirt and lend themselves poorly to cleaning by any one except janitors with ladders, etc. Two distinct types of lighting are needed in the operating room: (1) the so-called working light, or diffused light, and (2) the spotlight, or surgical light. I am in accord that the old skylights and north lights are out, since we use entirely artificial light, and now that we are using air conditioning we will probably resort to the glass bricks entirely, in replacement of windows.

The question of colors in the operating room has been another problem that we have been working over for some time. There was a greater flair for colors, probably, than in anything else—except spring styles in women's dresses—so we had everything from pale pinks to dark greens. The color of the walls was not so difficult to decide. We thought of non-glare tile in some of the pastel shades.

Considerable concern was caused by the question whether all the linen should be in some color such as green, blue or gray. Having tried all these colors, we have concluded that it is an expensive affair. Any of the more definite shades become spotted and ragged looking in a short time, so we have come to the conclusion that our purpose can best be served by having all the equipment one standard color (I am speaking of gowns, table covers, sheets, and so on). We felt that we would have cleaner, fresher and better looking linen by having most of it white and draping the immediate field in either a gray or a green. In this case one must have in the hospital some means of dipping or dyeing the linen frequently, because, owing to chemicals, it becomes spotted and ugly.

The question of spectators is another issue that has worried us, because we felt that we should have suitable facilities for them. But, as Dr. Walsh has said, I do not believe that one can accord them any space which will give them an adequate view of the operative field. I think we should stick to the single floor plan in most instances, and, as nearly as possible, have the operating room completely walled off with glass. We should allow the spectators to come in, and then entertain them with loud-speaker systems, illustrations or x-ray view boxes Certainly, no operating room that is in constant use can be made attractive for visitors, that [illegible] tl[illegible] they can get a position where [illegible] see the operative field.

when not in use, thereby permitting the use of this room for other work. Many other modifications are often made to meet the needs of highly specialized work.

The need for radiographic work in urology has influenced the location of cystoscopy rooms in radiologic departments rather than in surgeries, and perhaps in those instances where the urologist is wholly dependent on radiology for that service there is some justification for such an arrangement. It is desired, however, to point out that the bulk of the work of the urologist is of a nature which demands the utilization of surgical equipment, technic and personnel; it is also significant that urologists are becoming more and more adept in the use and interpretation of x-ray films and are almost completely dispensing with the aid of the radiologist. Under such circumstances and in view of the availability of more adequate facilities and personnel in the operating suite, the tendency to place cystoscopic rooms for house patients in the surgical suite is growing.

ANESTHETIZING ROOMS

Although present methods of anesthesia permit the patient to be placed on the operating table immediately on arrival, it occasionally happens that an operating room is not quite ready. So in every suite there should be one or more rooms that can be used for waiting, anesthetizing, recovery or postoperative intravenous therapy.

In the larger operating suites a room for the chief anesthetist will be required, in which are provided cabinets for the various items of equipment and supplies which may be needed for the induction of anesthesia or for resuscitation. An electric refrigerator with temperature ranges between 2 and 4 C. should also be located here for the storage of previously secured blood for infusion, of the four types in the proportion in which they are generally needed.*

DRESSING ROOMS

It is important that the dressing rooms for surgeons (and for nurses when space is available) be of adequate size and properly equipped and located. In order to assure the greatest degree of privacy and to permit smoking within the dressing room, we endeavor to locate this facility at the entrance to the suite with a door outside the suite for entering in street clothes, and a door inside the suite through which the surgeon enters the operating room area ready to scrub up. Excepting in the smallest hospitals the facilities for scrubbing up should never be in the surgeons' dressing room, these being placed in all cases immediately accessible to the operating rooms.

The dressing room should be equipped with lockers, showers, toilet and lavatory, comfortable lounge chairs, a table with writing materials and, if desired, a dictaphone. When both male and female surgeons have to be provided for, as has been the case in our experience in several instances, we have used the same locker and lounge room for both sexes, with separate toilet, shower and dressing alcove for the women. In some very large teaching institutions it has been found desirable to arrange a separate dressing room for residents and interns. For nurses, it is advantageous to locate dressing room facilities in close proximity to the nurses' workroom, but this room should not be used for any other purpose than washing and dressing.

OBSERVATION GALLERIES

Both architectural and engineering ingenuity have been concentrated on the construction of elaborate galleries over

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* Experience with the Cook County Hospital blood bank shows the amounts of the types as follows: type AB, 4 per cent; type A, 36 per cent; type B, 15 per cent; type C, 45 per cent.

PIONEER SURGERY IN SYRIA*

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I THOUGHT, perhaps, to relieve the mental tension from the most interesting and instructive papers that we have been hearing in these few days, that I would read some short reminiscences of my experiences of over fifty-five years in medicine and surgery. I really started my medical life earlier than fifty-five years ago. At the age of 14, in Sivas, Turkey, I was one of four private pupils of Dr West, an American medical missionary physician. I studied anatomy, chemistry and similar subjects. Among various operations that I saw were lateral lithotomy, amputations, operations for strangulated hernia, in which the bowel, whether gangrenous or not, was always reposited, operations for tumors that were not too near the neck, intervention for abscesses, puncture of abdominal ascites, etc. I recall an extensive plastic operation in which the patient died after a few days from tetanus. In this case the chief assistant was scolded because he had used a "rusty" needle. Version and forceps deliveries were common practices in midwifery. Ether and chloroform were the only anesthetics used. An ordinary table or a couple of packing cases served as our operating table. No antiseptics were used. Hands were not always washed before the operations, *but always after*. The first antiseptic I saw used was that employed by my cousin, a former pupil of Dr. West. He performed a successful operation on a boy who had fallen onto a sharp tree branch and remained pinned there for four hours. My cousin carefully washed a large coil of intestine (which was protruding) in water to which a few drops of carbolic acid were added and replaced it. He stitched the wound without drainage, and it healed by first intention! Anatomy was studied by stealing a corpse from the cemetery at night in winter. On one sad occasion we were discovered, as the corpse was in only a temporary grave and was found missing when the relatives came to recover it for burial. Later, I entered the Central Turkey Medical College in Aintab under the American Congregational Mission. After finishing my studies here I became a tutor, teaching anatomy and therapeutics for three years. This mission helped me to come to Columbia College in New York, where I was granted a diploma of the College of Physicians and Surgeons of New York in 1885. After further studies in New York, where I took a full course of histology and histopathology under Professor Heitman and a course in minute anatomy of the brain under Spitzka in a postgraduate school, I studied in Heidelberg in Czerny's and in Erb's clinic, and studied bacteriology in Koch's laboratory in Berlin. I returned to Aintab as *professor of pathology, medicine, surgery, etc.!*

My associates were Dr. Shepard from the United States and Dr. Graham from Canada. This school was closed after two years, so I started general work in Aleppo, Syria. This was in 1889. The country was then in the Dark Ages of medicine. I introduced Western medicine and aseptic surgery. I operated on some patients in their homes and on others in my clinic. Samovars provided hot water. Most of the patients were taken home to be nursed by their families, as nurses were unheard of. I kept

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* Read at the International Assembly of the International College of Surgeons, New York, May 23, 1939.

WORKROOM AND STERILIZING

Even in those hospitals where there is a central sterilizing room for the entire hospital, it is desirable, we think, to have separate facilities in a large surgical suite for the preparation, storage and emergency sterilization of instruments and dressings. The room for this work should be centralized in the suite, so far as possible, and should be equipped with built-in antoclaves and utensil sterilizers of sufficient capacity to meet the requirements. In this room there should always be available a liberal supply of sterile solutions and dressings, and all instruments should be readily accessible.

SUPERVISOR'S OFFICE

The surgical supervisor of an operating suite is responsible for the orderliness and general conduct of this area, including the instruction of student nurses, and her duties are such as to require a suitable office for conference with surgeons and nurses and the maintenance of the records of the department.

RELATIVES' WAITING ROOM

Whenever a room for waiting relations is provided it must be located outside the operating area. It should be tastefully and comfortably furnished and equipped with a public telephone booth for outside calls.

ORTHOPEDIC SHOP

No surgical department is complete without readily available facilities for the manufacture of casts, splints and appliances. In the small hospital, of course, it is necessary to have the major portion of such work done outside, but in those institutions where extensive orthopedic work is conducted the establishment of a well equipped shop will add much to the efficiency of the service and decrease the cost to the patient. In large hospitals, therefore, or in smaller ones doing extensive orthopedic work, we always make adequate provision for a completely equipped shop in the basement of the hospital.

LIGHTING

We have previously mentioned the undependability of daylight because of its variability, and the undesirable feature of the large operating room windows and skylights. Consideration will be here concentrated on artificial lighting.

The artificial illumination of operating rooms has been the subject of a great deal of study and experimentation during recent years, resulting in the production of various special fixtures which are more or less satisfactory for the purpose. In choosing a special lighting fixture for the operating room, the following requirements, which are embodied in several units on the market, should be specified:

1. A constant illuminating intensity at the work place of from 350 to 500 foot candles should be at all times available, with a variable dominant direction to the light.
2. The lamp should be designed so that an additional filament is available in the event of the burning out of one. Lamps are now available with a ring filament for diffuse illumination and a concentrated spotlight filament for maximum visual efficiency; these may be used separately or simultaneously.
3. Shadows should be entirely eliminated or minimized.
4. There should be no glare, and provision should be made to eliminate excess heat.
5. The lamp should have a constant color value; under certain conditions accuracy of color value may be attained by the use of approved spectral transmission glass.
6. The cost of installation, operation and maintenance should be reasonable.

Instead of the separate unit a system of ceiling lights with prismatic plates or reflectors which focus the light on the work plane is sometimes used. While this is satisfactory from the standpoint equally bad. I removed a uterine myoma weighing 27 pounds (12.2 Kg.). I was obliged to take care of enormous ovarian tumors, advanced renal diseases, cranial traumas and hydatids and repair partially destroyed and disfigured faces, noses and lips, the results of Aleppo differences of opinion. Thus Aleppo was, and still is, a rich surgical field.

But in those days the word operation spelt death. When I proposed an operation all the family would slap their faces, tear their hair and set up a wailing as for a death. To gain their confidence in surgery I chose my cases carefully. My first hundred and fifty operations, comprising hysterectomy, removal of ovarian tumors, repair of hernias, operations on glands, etc., were crowned with extraordinary success. Pediculated abdominal tumors were treated extraperitoneally. In a case of hydatid of the spleen with numerous adhesions, I used the same method successfully. Peritonitis was conspicuous by its absence. I took the risk of removing a large adenomatous goiter. The operation lasted several hours, and I finished my work by the light of a hanging oil lamp. I performed the first renal operation in Aleppo. Having diagnosed a renal stone, I exposed the kidney and felt a small stone, which during the manipulation of extraction, to my great disappointment, disappeared, and, as I thought, passed down the ureter. The following day the stone was passed with the urine.

In diagnosing renal calculus, in addition to noting the clinical symptoms I depended on microscopic examination of the urine, attaching importance to the types of epithelia and blood cells found in it. In about 90 per cent of cases the diagnosis was correct.

Even today with the aid of x-rays I never operate without confirmation of clinical tests. However, in one instance I diagnosed renal calculus by both x-ray and clinical and microscopic examinations, which led to an incorrect diagnosis. The patient was a six months pregnant woman. Clinical examination showed hematuria and pain in the kidney region. Microscopic examination showed renal epithelia and leukocytes. X-ray examination showed a shadow suggesting a uric acid stone. On operating I found a normal kidney. I closed the incision and performed a median laparotomy. I found an old right ovarian cyst pushed up by the pregnant uterus to the lumbar region; its pedicle was twisted two or three times upon itself. The twisted pedicle in front of the kidney had created the shadow on the x-ray film.

PROGRESS

During its thirty years of functioning my hospital has seen many changes. During the World War I had the help of three English nurses, and at various periods we served Turkish troops and their families as well as German and British troops. Ours was the only hospital having an x-ray equipment in working order in Palestine and Syria. The hospital's motto was the same as that of the International College of Surgeons: *La science n'a pas de patrie.* Since the war, my son, a Cambridge and Middlesex man, has helped me to modernize the hospital, such modernization comprising the acquisition of a new Simmons x-ray apparatus for high voltage roentgen therapy and the latest instruments of all types. We are very happy in our work. We have an extensively organized system of blood examinations and groupings for transfusion.

Whereas formerly American diplomas were looked on scornfully in Syria, today, as a result of the great impetus of American surgery, such a diploma is a prized possession, and it is an honor to me (with all my internatio [illegible] traini [illegible] to be known as the *H* [illegible] *ici* [illegible] handling and using inflammable anesthetics in minimum quantities; (*b*) minimizing escape into the room; (*c*) eliminating so far as practicable all possible sources of ignition in anesthesia and operating rooms when explosive anesthetics are being used, and above all within the anesthesia equipment itself.

The safeguards recommended may be briefly summarized as follows:

1. Maintenance at all times of sufficient forced ventilation to assure about eight changes of air per hour, and a relative humidity in the operating room of not less than 55 per cent.
2. Elimination, so far as possible, of such materials as wool and silk, which retain high static charges.
3. Prohibition of smoking in the operating suite.
4. Safeguarding of all electrical circuits and electrical equipment against sparking and short circuits by every known means. This contemplates enclosed motors and rheostats; mercury switches; explosion-proof plugs and receptacles; guarded light bulbs, and frequent inspection of cords and terminals of portable equipment. The hazards of spark-producing or incandescent equipment cannot be completely eliminated but may be minimized by the application of the measures herein suggested, but under no circumstances should such equipment be used in the presence of inflammable anesthetics around the patient's head or pleural cavity or without the interposition of a screen between the head and the area of operation.
5. Recognition of the fact that the anesthetizing apparatus with its breathing tubes, bags and mask constitutes the greatest single explosion hazard through the generation of static inside this equipment, and prevention of such a hazard by: (1) adequate humidity both inside and outside the machine; (2) metal mesh in practically continuous close contact with all nonconducting surfaces; reducing and mixing valves to be so designed that there is no possibility of any of the inflammable gases mixing at cylinder pressure with oxygen or nitrous oxide.

PIPING ANESTHETIC GASES

On the assumptions that it would be of advantage to eliminate from the operating suite the large high-pressure tanks containing gases, to reduce traffic, to decrease cost and to add to the convenience of the anesthetist, a number of hospitals have used the method of piping gas to operating rooms, with varying results. We have had considerable experience with this subject from both an administrative and a planning standpoint and, as a result of the dissatisfaction resulting, we advise against such installations in all new projects. Our objections may be summarized as follows:

1. It is a very costly procedure from the standpoint of labor, material and equipment.
2. The installation requires the use of expert labor and special materials, and any deviation from the specifications creates a serious hazard with continuous loss of anesthetic gas. Serious accidents have occurred through defective joints in some installations.
3. Once installed the fixture is permanent, since the piping and elevated floor outlet base become a part of the structure, thus reducing the flexibility of the operating room. Many anesthetists insist on the use of their own anesthetic apparatus and will not use the piped gases even when available.
4. The perfect functioning of a piped gas supply requires the services of a responsible employee thoroughly acquainted with the handling of large high-pressure gas tanks, and in the absence of that individual many difficulties arise; failure to connect a full tank when necessary can cause tragic results.
5. The independent anesthetic gas machines with tanks attached are highly perfected; they are portable and can be used in any room of the hospital, whereas if gas is piped it can only be used in the locations where outlets are provided, and outlets are expensive. Even in hospitals where gases are piped to the operating rooms it becomes necessary to utilize tanks directly for the many other distant locations where it may be necessary to administer an anesthetic.
6. None of the dangers inherent in explosive gases are lessened by piping gases, since most accidents have occurred at the outlet of the gas and not at the tanks. With the modern, independent gas ap-

ACTIVITIES OF MILITARY SURGEONS IN THE INTERNATIONAL CONGRESSES OF MILITARY MEDICINE AND PHARMACY*

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THE following peroration by the great Pasteur in concluding his remarks at the inauguration in November 1888 of the Institute that bears his name seems particularly appropriate:

> Two opposing laws seem to me now in contest. The one a law of blood and death, opening out each day new modes of destruction, forces nations to be always ready for the battle The other a law of peace, work and health, whose only aim is to deliver man from the calamities which beset him The one seeks violent conquests, the other the relief of mankind The one places a single life above all victories, the other sacrifices hundreds of thousands of lives. The law of which we are the instruments strives even through the carnage to cure the wounds due to the law of war Treatment by our antiseptic methods may preserve the lives of thousands of soldiers. Which of these two laws will prevail, God only knows. *But of this we may be sure, that science,* in obeying the law of humanity, will always labor to enlarge the frontiers of life

AIMS OF CONGRESS

Inspired by these words, military surgeons for the past eighteen years have been organized in the International Congress of Military Medicine and Pharmacy, to "enlarge the frontiers of life"—to alleviate suffering, to cure disease, to save life and limb.

The late Albert the Good and Queen Elizabeth of the Belgians sponsored the first International Congress of Military Medicine and Pharmacy, which met in Brussels in 1921, and biennially thereafter in Rome, Paris, Warsaw, London, The Hague, Madrid, Brussels, Bucharest, and now in Washington and New York. The Congress since its first meeting eighteen years ago has progressed with such great strides that instead of the original twenty-one represented countries we now have twice that number. There has been not only this increase but also a widening of the scope of activities.

In the beginning the aim of the Congress was to collect, codify and standardize the lessons of the World War in medicine, surgery and sanitation in all their branches, from every side of the battle line. This was a departure from precedent, for previously medical history of wars dealt with each particular army or even with a given sector and so was limited to the experiences of a small group of military surgeons.

In Continental United States of America in 1937 approximately 10,000,000 disabling accidents occurred, 375,000 of which caused permanent injuries. In the same year there were 106,000 accidental deaths. These peacetime fatalities more than doubled in the twelve months of 1937 the number of American lives lost in our eighteen months of fighting in the World War, and the total number of accidental injuries that year was about two and one-half times the total number of American troops engaged in the war. These various peacetime accidents occurred in the course of day-by-day existence—from sea and railroad disasters, from fires, earthquakes, tornadoes and floods, from aviation and automobile accidents, in industries, construction work, manufacturing, mining, quarrying, in oil and gas wells, from accidental absorption of floor can be flushed. Where plaster is used, a special trap must be provided.

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* Presented at the Ninth Session of the International Office of Medico-Military Documentation of the International Congress of Military Medicine and Pharmacy May 15, 1939, W[illegible], D[illegible] and read by request at the International Assembly of the International College of Sur[illegible] [illegible], 1939.

In the utility room a combination sink and laundry tub and a flushing rim clinic sink are required. These fixtures can now be secured in stainless steel or monel metal, in which they are more satisfactory than in vitreous china, porcelain enamel or solid porcelain.

The nurses' workroom requires a double drainboard sink and the instrument room a shallow instrument sink with a drainboard.

In the operating room for nose and throat surgery, which can also be used for certain dental procedures, wall outlets are provided for hot and cold water, as well as vacuum and pressure for connection of mobile units designed for these specialties.

There should be, of course, showers, lavatories and toilets for the doctors' and nurses' dressing rooms, also a drinking fountain in the corridor and various other plumbing items required under varying conditions.

CASUALTY SECTION

Having considered the chief factors demanding attention in the setting up of the main surgical suite, we now come to that section of the hospital through which many serious surgical cases enter.

The ideal casualty section should be designed and equipped so as to be capable of meeting the demands of any emergency. This is a large order when one considers the possibility in a single day of such a variegated assortment of admission diagnoses as traumatism, involving fractures and hemorrhage; poisoning of all types, including alcoholism and asphyxia; coma in diabetes; psychopathic conditions, etc.

The casualty department should be placed on the ground floor readily accessible by ambulance and so articulating with an elevator that patients may be quickly transported either to bed or to operating rooms without passing through main corridors. Since both laboratory and x-ray services are needed here, these should be as closely coordinated as possible and, in the larger hospitals, a mobile x-ray equipment should be located in the examining room. Needless to say, the ambulance entrance should be reserved for that purpose, and under no circumstances should it be shared with the undertaker. In its design there should not only be an unloading platform on a level with the ambulance floor, but also a ramp for the easy transport of emergency patients arriving in private automobiles. It is desirable to protect this entrance from high winds and from rain by proper enclosures and an extended canopy.

The minimum requirements for the casualty department are: an examining room; an emergency operating room; scrub-up and sterilizing facilities; plaster and splint supplies; a medicine closet stocked with the regular poison antidotes; an icebox for serums and blood for transfusions; oxygen tanks and resuscitation apparatus.

A cubicled two bed ward with nursing facilities should always be provided even in the small hospital, and larger institutions will require considerably more beds. These emergency beds are used for various types of patients, such as the patient who requires first-aid treatment but who because of shock is unable to be immediately discharged; the patient who is likely to be transferred to another hospital; the moribund patient; the patient suspected of having a coincident communicable disease, and, finally, patients admitted at night who require more constant attention than might be possible elsewhere.

As the casualty department increases in size it is necessary to provide a room for waiting friends adjacent to, but not connected with, the examining rooms, space and facilities for keeping records and as many more examining and operating rooms as the size of the hospital and the demands require.

It is recognized, of course, that a con-most sympathetically received, especially with reference to the protection of the civil population. It covers the five following main points: 1. Organization of medical towns and zones. 2. Medical assistance by nonbelligerents. 3. Treatment of prisoners of war. 4. Measures applicable in case of violations of the convention. 5. Protection of civil population.

There was formed at the Eighth Session of the International Office of Medico-Military Documentation, which met in the Grand Duchy of Luxemburg in July 1938, an International Committee of Information and Action for the Protection of the Civil Population in Time of War, under the patronage of the Grand Duchess of Luxemburg, with the Prince of Luxemburg as President, and His Excellency Joseph Bech, the Minister of Foreign Affairs, as Vice President. By an agreement between the Executive Committee of the International Law Association and the Permanent Committee of the Congress, a day was given to the consideration of the question of aerial bombardment from the standpoint of international law. Studies are being made along this and other lines of protection of the civil population during war with the collaboration of the International Law Association, and a quarterly journal is being published in Luxemburg.

SUMMARY AND CONCLUSIONS

The aims, history and activities of the International Congress of Military Medicine and Pharmacy, composed of military surgeons of many nations, are outlined. As we contemplate the future of this movement we can envision in the wider horizon of tomorrow other branches that may bring fruition in many fields. Before long some of the plans which resulted from the meeting at Luxemburg in the summer of 1938 for the enlargement of one line of practical endeavor will be brought to our attention. Here is an opportunity for the American peace organizations to take an active interest and play an important and telling rôle in this troubled world.

RÉSUMÉ

Les activités du Congrès International de Médecine et de Pharmacie Militaires

Dans cette communication on trouve décrit les buts, l'historique et les activités du Congrès International de Médecine et Pharmacie Militaires.

ZUSAMMENFASSUNG

Bericht vom internationalen Kongress für Militärmedizin und Heilmittelkunde

Ziel, Geschichte und Aktivität des Internationalen Kongresses für Militärmedizin, an dem Militärchirurgen aus vielen Länden teilnahmen ist geschildert.

SUMARIO

Actividades del Congreso Internacional de Medicina y Farmacia Militar

La mira, historia y actividades del Congreso Internacional de Medicina y Farmacia Militar, compuesto de cirujános militares de muchos paises, está mostráda.

RIASSUNTO

Resoconto del Congresso Internazionale di Medicina é Farmacologia Militare

Lo scopo, la storia e le attivitá del Congresso Interzionale di Medicina Militare al quale parteciparono molti chirurgi militari viene descritto.

RÉSUMÉ

Installation d'un départment chirurgical dans un hôpital moderne

On doit considerer la location et le nombre des salles d'opération et n'oublier pas les chambres destinées pour l'anesthésie des malades. Les salles de pansements, les galleries d'observation, les dispositions à prendre pour les services radiologique, pathologique et bactériologique seront l'objet d'étude et de réflexion. Parmi les autres desiderata de grande importance citons les couleurs, l'aération, les planchers, les ascenseurs, le plombage et autres accessories.

Tout ce qui peut contribuer au perfectionnement de la science chirurgicale doit être accessible, mais il faut décourager toute extravagance.

ZUSAMMENFASSUNG

Projektierung der chirurgischen Abteilung eines modernen Krankenhauses

Im Projekt eines modernen Krankenhauses sollte die Lage und Zahl der Operationssäle, die Einrichtung von Vorbereitungsräumen, Verbandräumen, Zuschauergallerien, Röntgenabteilung, pathologischer und bakteriologischer Abteilung beachtet werden. Farben, Luftkühlung, Böden, Aufzüge und Leitungsrohren sind wichtig.

In der chirurgischen Abteilung sollte alles was zur wissenschaftlichen Vervollkommnung nötig ist vorhanden sein; jeder unnötige Luxus jedoch sollte vermieden werden.

SUMARIO

Planiando el departamento quirúrgico del hospital moderno

Al planear un hospital moderno, el lugar y el número de salones de operación debe ser considerado, teniendo en cuenta las comodidades para la anestesia, cuarto de curas, sala de observación, servicio rediográfico, etc. Color de las paredes, purificación del aire, pisos, elevadores y plomería son de importancia.

En el juego de salones de operación, cualquier ayuda que contribuya á la perfección de miras cientificas debe estar rapidamente á nuestro alcance, pero extravagancias innecesarias deben ser desechadas al planear un hospital.

RIASSUNTO

Il piano per un reparto chirurgico in un ospedale moderno

Nel piano per un ospedale moderno si dovrebbe considerare il luogo e numero delle sale operatorie, le facilitazioni per anestesia, gallerie per osservatori, reparto radiologico, patologico e batteriologico e così via. Colori, refrigerazione dell'aria, pavimenti, ascensori e tubature sono importanti.

Ogni aiuto che contribuisce alla perfezione scientifica dovrebbe essere presente, ma ogni luso superfluo dovrebbe essere evitato.

———o———

The Society of Wives of Surgeons of the Mexican Academy of Surgery held a cocktail party for the women members of the Mexican Academy of Surgery Sunday July 23 in the gardens of Quinta del Lago, placed at their disposal by Dr. and Mrs. Abraham Ayala González.

only, and to aspirate liver abscesses. This is the method of choice as a diagnostic procedure in cases of indeterminate ascites.

The contraindications to the method, such as the acute abdomen, intestinal obstruction, etc., are enumerated The procedure is simple, painless and safe, enhances other diagnostic procedures, and, as stressed by the authors, does not replace surgical intervention.

CARCINOMA OF THE CERVIX

"Cervical Carcinoma" by Dr J William White of Scranton, Pa., was an interesting exhibit with the aid of drawings, statistical data, and models demonstrating the four grades of carcinoma of the cervix. The incidence, etiology, classification, pathology, mode of spread and different therapeutic appliances were presented

Early diagnosis was strongly stressed Dr. White pointed out that, unfortunately, most patients are beyond the operable stage at the first examination. He recommends only radium as the method of choice in the treatment of this disease, which is supplemented with high voltage roentgen therapy, except in grade one, when the latter is not used. Hysterectomy is recommended only in the presence of persistent pyometria.

PLASTIC SURGERY

"Skin Grafting and Plastic Surgery," by Dr Maxwell Maltz, of New York, consisted of photographic pictures demonstrating various types of plastic operations, and skin grafting before and after surgical intervention, showing excellent cosmetic and functional results.

Dr Jacob Sarnoff, of Brooklyn, showed colored photographs and plaster models of many types of plastic surgery, also a series of pictorial surgical clinics demonstrating different stages of plastic procedures.

BLOOD TRANSFUSION

The "Blood Transfusion Betterment Association of New York City" is an organization founded in 1928 and is an expansion of the Cooperative Blood Donors Bureau. Its exhibit was an extremely interesting one, and with the aid of charts and statistics revealed the tremendous value this organization is to the community by supplying healthy blood donors in the metropolitan area. This service is available to all hospitals and physicians, thereby protecting the patient from receiving incompatible or diseased blood, or blood of an inferior quality, also protecting the donor from ruthless exploitation. Accidental deaths due to transfusions were discussed, and it was disclosed that incompatibility was responsible for more than 50 per cent of transfusion accidents. Prior to this time, many commercial agencies were operating whose standards as to the fitness and health of their donors were more or less lax.

The Association is controlled by a board of trustees of nine members, most of whom are physicians and hospital executives; also a board of medical control of thirteen physicians consisting of experts in hematology. Research and educational activities are supported. A donor member must conform to the strict requirements of the sanitary code of the Department of Health of New York City, must have frequent physical examinations, must be free from contagious and infectious diseases (especially syphilis, malaria and tuberculosis), and have a negative history of allergy, epilepsy, drug addiction and alcoholism; must have a hemoglobin content of at least 88 per cent, and must submit to a Wassermann test every three months and a Kahn test before each transfusion He must rest one week for every 100 cc of blood given

The popularity of the association is evidenced by its rapid growth, the number of donors having tripled from 1930 to 1937.

MOTION PICTURES

A feature of the congress which evoked continued interest was the projection of colored motion pictures—in some cases with sound—showing various types of surgical operative procedures. These films were produced under the auspices of Davis & Geck, and combined the exhibits of the Anglo-French Drug Co. and E. Fougera & Co. (Medical Film Guild) with the private exhibits of Dr. Fred H. Albee, Dr. Jacob Sarnoff and Dr. Morton Berson

Of particular interest were the motion pictures of Dr Albee, who offered striking colored films of different types of orthopedic operations, especially in bone grafting and reconstructive surgery.

Of the numerous motion pictures shown by the Medical Film Guild, some of the outstanding ones were "Uterosalpingography," by Dr. Julius Jarcho, "Sterilization of the Uterine Cornu," by Dr. Mortimer N. Hyams, and "Peri-Urethral Phlegmon," by Dr Max Rohde.

The surgical technic depicted by these colored films is much clearer than can be obtained from a crowded amphitheatre, and demonstrates their use as a valuable educational medium.

COMMENT

These scientific exhibits were enthusiastically received, and well attended by the Fellows and Members of the College and their guests. Future meetings should encourage more exhibits of such high caliber one room in my clinic for very ill patients. I met with strong opposition in surgery; my colleagues at first opposed operations, but in time they were gradually converted.

MEDICINE

This was far behind the medicine in Europe, and fevers were known as intermittent or remittant. Typhus fever was not recognized. Typhoid was seldom diagnosed. One of my first important medical cases was that of a young daughter of one of Sultan Hamid's bodyguard. I was called in consultation with four European and five military physicians, who had all been treating the condition as acute miliary tuberculosis. On examination I diagnosed typhoid fever complicated with bronchial pneumonia. My colleagues were very angry, but as they considered the case hopeless it was left in my hands. The patient responded to typhoid treatment; after two weeks the temperature was normal, and recovery followed. In the same year I had my first experience with a cholera epidemic and was able to isolate the comma bacillus of the Asiatic type. Fortunately, I had all the necessary apparatus and chemicals with me to make cultures. It happened that the Sultan of Turkey's fortune teller in the palace at Istanbul had foretold that the Sultan would die from cholera coming from Aleppo, so a large body of physicians from Istanbul visited Aleppo to try and prevent the cholera from spreading their way.

There was no ice to be found to control the temperature of my culture plates and tubes, so I kept them on the stone steps leading down to the deep underground rainwater drinking system. I was able to help the people by publishing pamphlets on preventive measures. Intravenous injections of hypertonic saline solutions in large quantities, 1, 2 and 3 liters, saved many lives and worked miraculously in bringing apparently dead men to life again.

X-RAYS

In 1896, at Watson's, London, I bought a "complete" x-ray equipment, which worked with bichromate cells. It had a 6 inch spark. I took it to Aleppo. I called the important townsmen, European and native, and demonstrated to them in a dark room the bones of their hands and metallic objects in wooden boxes. They were much impressed. This x-ray set served me until 1909, when I installed a new x-ray apparatus and an engine for electric lighting (there was no electricity in Aleppo) and pumping water. This was the only existing x-ray apparatus in Syria and Palestine.

SURGERY

Surgery was still further behind the times. Before coming to Aleppo I had occasionally, during summer holidays, made medicosurgical tours. I saw many desperate and interesting cases and was compelled with a minimum supply of instruments (including only four clamps) to perform extensive operations in very primitive houses. I removed a tumor from a small boy's neck, half the size of his head. The operation took me four hours. I also removed a tumor weighing about 12 pounds [5.4 Kg.]) from the axilla of an Arab man aged 90. A female relative of this man, aged 108, suffering from chronic arthritis, had a third dentition, a row of eight white teeth, the size of milk teeth, in the inferior maxilla.

In Aleppo I saw four rectovesical fistulas resulting from lateral lithotomy, also enormous neglected hernias. In the case of a beggar, no organ remained in the abdomen. All had glided into the hernia. When the patient sat down, his "newly acquired abdomen" touched the ground. When walking he supported it with a sling. Hydrocele cases were

(American Doctor), and now a still greater honor to be part of the International College of Surgeons. May its progress continue unabated!

SUMMARY

A review of pioneer efforts in surgery is presented. The hardships of establishing modern methods against prejudices are stressed, and a pen picture of early practice in Syria is recorded.

RÉSUMÉ

La chirurgie pionnière en Syrie

L'auteur passe en revue les efforts pionniers de la chirurgie en Syrie. Les difficultés qu'on rencontre à établir les méthodes modernes, à surmonter les préjugés sont décrites en détail. L'auteur nous donne aussi une image exacte et intéressante de l'exercise de la médecine en Syrie au commencement de nôtre ère moderne.

ZUSAMMENFASSUNG

Pionierschirurgie in Syrièn

Ein Ueberlick über die Pionierarbeit auf dem Gebiete der Chirurgie in Syrien wird geboten. Die Schwierigkeiten, die moderne Methoden im Kampfe gegen Vorurteile zu überwinden haben wird beschrieben. Der Autor gibt ein genaues Bild des Standes der Medizin im Beginne unseres Zeitalters.

SUMARIO

Precursores de cirugía en Siria

Una revista del esfuerzo en propagación de la cirugía es presentada. Las dificultades de establecer métodos modernos contra prejuicios estan en coacción, y un cuadro á pluma de la practica primitiva en Siria es presentado.

RIASSUNTO

Avanguardia di chirurgia in Siria

L'autore presenta un quadro della situazione della chirurgia in Siria e dà speciale attenzione alle difficoltà che si aveva da sormontare nella lotta contro la superstizione.

◆

Dr. Clarence O. Sappington, of Chicago, received the first W. S. Knudsen award for the most outstanding contribution to industrial medicine during 1938-1939. The award was made on the basis of his book "Medicolegal Phases of Occupational Diseases. Mr. W. S. Knudsen, president of the General Motors Corporation, made the presentation at the annual meeting of the American Association of Industrial Physicians and Surgeons in Cleveland, June 7.

The University of Toronto Faculty of Medicine through its council has awarded the Charles Mickle Fellowship for 1939 to **Dr. Charles Herbert Best**, professor of physiology in the university, for his contributions to physiology,, especially those related to diabetes and carbohydrate metabolism, to histamine and histaminase, to choline and fat metabolism and to thrombosis and heparin. The award is the income from $25,000 requeathed by the late Dr. William J. Mickle.

◆

Dr. William Harold Ryder, New Haven, Conn.
Dr. Joseph Frederick Saphir, New York.
Dr. John Hubley Schall, Brooklyn.
Dr. Lewis Frederick Smead, Toledo, Ohio.
Dr Horace Edward Turner, Chicago.
Dr. Roy Upham, New York.
Dr. Leopold Vaccaro, Philadelphia.
Dr. Earl LeGrand Ward, Sante Fe, N. M.

Convocation of the International College of Surgeons during the International Scientific Assembly, Hotel Roosevelt, New York City, May 22, 1939.

Dr. Edwin J. Stedem, Columbus, Ohio.
Dr Charles Walker Streamer, Pueblo, Colo.*
Dr. Ford Moore Summerville, Oil City, Pa.
Dr Wells H. Teachnor, Columbus, Ohio.
Dr. Clarence William Trexler, Honolulu, T. H.
Dr. Solomon J. Turel, New York.
Dr. Leigh F. Watson, Los Angeles.
Dr. Randolph Edwin Watts, Silver City, N. M.
Dr. Thomas Wheeldon, Richmond, Va.
Dr. James Norman White, Scranton, Pa.
Dr. Henry Ward Williams, Rochester, N. Y.
Dr. John M. Wilson, Mobile, Ala.
Dr. Howard Haynes Yoakem, Columbus, Ohio.

ADMITTED TO MEMBERSHIP — UNITED STATES CHAPTER

Dr A. Henry Arp, Moline, Ill.
Dr. Elmer James Ball, Los Angeles.
Dr. Andre B. Carney, Tulsa, Okla.
Dr. John William August Emhardt, Indianapolis.
Dr. Bliss L. Finlayson, Price, Utah.
Dr Joseph F. Gennaro, Brooklyn, N. Y.
Dr. Edmund C. Hessert, Camden, N. J.
Dr Hannibal Jaworski, Waco, Texas.
Dr. Eugene Anthony Ockuly, Toledo, Ohio
Dr. Robert Charles Olney, Lincoln, Neb.
Dr. George Otto Pobe, Port Jervis, N. Y.
Dr. Robert L. Preston, New York.
Dr. Wade Sisler, Tulsa, Okla.
Dr. Alan Leo Sparks, Indianapolis
Dr. Harry Charles Stein, New York.
Dr. Harry Subin, Atlantic City, N. J.

ADMITTED TO ASSOCIATE MEMBERSHIP — UNITED STATES CHAPTER

Dr. Daniel George Arnold, Bucyrus, Ohio.
Dr Warren Austin Baird, Toledo, Ohio.
Dr. Arthur Ray Beyer, Tampa, Fla.
Dr. James Ivor Collins, Toledo, Ohio.
Dr. William John Connelly, Carnegie, Pa.
Dr. William Latimer Cooke, Charleston, W. Va.
Dr. Samuel Dubin, Brooklyn.
Dr. Hazen L. Hauman, Toledo, Ohio.

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* Dr Streamer died July 5, 1939

poisonous gases, and even from what seemed to be minor accidents in the home.

The military surgeons are especially fitted by experience to aid those who suffer from the casualties of peace. Military surgeons, then, are united everywhere in peace and in war for the practical purpose of making and keeping the man power of the world fit for any national emergency and as worthwhile economic and social factors in their communities.

HISTORY

At the first meeting of the International Congress of Military Medicine and Pharmacy, the King of the Belgians appointed a Permanent Committee, which has been the central working and managing unit of the organization. It consisted of one representative from each of eight countries—Belgium, Great Britain, France, Spain, Italy, Brazil, Switzerland and the United States. Three of us who were on that original committee are still active in it —Colonel Jules Voncken, of Belgium, Colonel J. Thomann, of Switzerland, and myself. The Permanent Committee has met at each Congress and often in the year between. With the many additional countries joining the Congress, it has been decided to enlarge the Permanent Committee and to change its name to the International Committee of Military Médicine and Pharmacy, which was officially organized for the first time at the Tenth International Congress, held in Washington, D. C., May 7 to 15, 1939.

Under the management of this Committee, as was the case with the Permanent Committee, will be the organization of the Congresses, the publication of the *International Bulletin of Military Medicine*, the International Office of Medico-Military Documentation, relations with international organizations, and the Medico-Legal Commission.

As in a manufacturing plant the by-products are often of greater value than the original product and may bring in a large return, so it is with many of the offshoots of the International Congress. One of its most active and daily working branches is the International Office of Medico-Military Documentation, with headquarters in Liége, under the direction of Colonel Jules Voncken. This was created in 1930. Here are collected nonconfidential official documents of the medical services of the nations of the world, official medicomilitary periodicals, abstracts of articles on military medicine, original works, books on military medicine, unpublished material and the like. There is a bibliographic index, and those countries which subscribe to the Office are furnished any desired information at its command.

At the Seventh International Congress, held in Madrid in 1933, military surgeons invited experts in international law to join in the sessions. At the same meeting the Principality of Monaco was represented for the first time. As a result of the reports he received from his delegate, Prince Louis II of Monaco became keenly interested in the work, particularly with regard to three points which had special reference to future wars. These had been discussed by the Permanent Committee and the international jurists. They were: (1) the creation of medical towns or districts, (2) the ratification of the Geneva convention and (3) protection of the civilian population. The Prince of Monaco invited the Permanent Committee and a number of leaders in international law to his Palace for a week's conference. From this was born the Medico-Legal Commission, which has as its objective the lessening of the horrors of war and the protection of noncombatants. A natural outcome of all these conferences was the Pact of Monaco, a plan which was submitted to the International Red Cross and was has established Medicine as a living force in a living world. Our price is a token that the glorious past of surgery shall be transmitted intact and with increment to those who are to follow us.

Indifferent to border, creed or race this College stretches forth its hand to gather the Big Man of surgery into the company of his fellows

We seek the man whose pity is as vast as human suffering

We seek the man whose passion to learn is as great as his distrust of ignorance

We seek the man who honors the past by living in the present for the future

We seek the man who fears nothing so much as standing still

We seek the man who, knowing the way, dares to lead the way.

We seek the man who in the dignity of his greatness counts it no shame to confess his imperfection and repair it

Some one has said that the first duty of excellence is to perpetuate itself That, I submit, is a saying which the International College of Surgeons might well take as a motto. In a very *few words it beautifully* describes the particular field of endeavor we have appropriated for ourselves.

Doctor Crotti said the same thing in his presidential address last year The International College of Surgeons, he told us, does not desire to have the outstanding surgeons of the world upon its roster merely as fellows. It wants fellows who by the explicit conditions of their fellowship will act as mentors and educators for the rising generation of surgeons.

I say again: "The first duty of excellence is to perpetuate itself."

This College is no haven of rest from great labors, no mutual admiration society in which fine birds may display their fine feathers in the company of their equals.

Woe to those who think that the claim upon them is ended with the writing of a check and receiving the credentials of membership. No!

As long as any of us have anything worthy of place in the treasure house of surgical knowledge, the claims will never cease. In our Guilds, in correspondence, in publication, in chapter meetings, in the Congresses of the International College—wherever and whenever two or more meet to exchange ideas—there the College will lodge its claims

Let it be said to the glory of our candidates tonight that their very presence here betokens their willingness to pay the price

For the prestige of surgery, for the greater happiness of mankind everywhere, they pledge themselves to live and work.

In this they honor us.

For this we honor them.

The physician is a man apart, *and in the world* of his labors he is a god, proposing and disposing. But for all that he, too, is only mortal.

He is born, he lives, he dies. Out of nothingness he comes and into nothingness returns, and only the Great Architect may say what end he serves in the inscrutable pattern of eternity.

You and I may *speak* of many things with the finality of absolute knowledge, but we have lived and worked too long with Death to guess at the intentions which called the race of man into being *and set us all at the tasks we do.*

It may be that the doubters have prophesied aright, that human life is a paltry incident in a pointless universe. It may be that this world of ours is, after all, no more than a "tale told by an idiot."

For all I know, the ends to which you and I so solemnly address ourselves may lead exactly *nowhere.*

I dare to hope that the doubters are at error. And yet, if one of them should present to me an *indisputable* proof that life and mankind bear no meaning, I know that I could face the appalling fact undaunted and go serenely forward in the course I follow now.

With or without the promise of eternity, with or without the faintest token that any lasting significance can attach to the things I am and the things I do, I would not alter my destiny.

For me, it is enough that I am a physician, a surgeon, a seeker after truth, a minister to the suffering of my fellows, a willing subscriber to the lofty scruples of Hippocrates.

It is enough that I may be one of you.

For Medicine is more than occupation, more than art, more than science, much more than codes and traditions.

It is a way of life, and more than that, it is a faith the articles of which encompass and vitalize every creed that the hungering heart of *man has ever spun to explain himself on the* stage of the universe.

Let us in these few moments tonight discover again the bedrock on which our temple of Medicine is builded. Let us look upon the eternal verities of our calling and dedicate ourselves anew to them.

They were the faith of your predecessors. Doubt if you will, they are still the faith of your contemporaries, as they will be the faith of your successors.

Whosoever shall honor them in thought and action, his work shall not perish.

REVIEW OF SCIENTIFIC EXHIBITS

S. J. TUREL, M.D., F.I.C.S.
NEW YORK

ONE of the noteworthy features of the International Assembly of the International College of Surgeons was the scientific exhibits, which were well arranged, and characterized by their excellence and important educational value.

CASTS, DRAWINGS, LANTERN SLIDES

Among the outstanding exhibits, which drew many favorable comments, was that of Dr. William Seaman Bainbridge. His collection of wax casts, replicas of actual conditions in natural color of his private and hospital cases, is a most unusual and valuable addition to the science of medicine. About 500 of these casts were on display. They showed such conditions as syphilis, carcinoma, epithelioma, lichen planus, sarcoma, leukoplakia, keloid, mixed lesions, tuberculosis, congenital deformities, leprosy, epulis, scurvy and supernumerary breasts. Many of the casts illustrated the condition before and after treatment.

In addition to the foregoing, there were drawings, some in color, by an anatomic artist, who sketched them at the time of operation by Dr. Bainbridge. These illustrated unusual pelvic and abdominal conditions. Limited space permitted the display of only a few of the 1,500 of such drawings of his private and hospital cases. It is hoped that there will be an opportunity for a special showing of all the drawings in Dr. Bainbridge's collection, for they are of distinct value to the surgeon and to the student.

Lantern slides of tumor formation in the mineral, vegetable and animal kingdoms, and allied diseases were the third and final part of this extremely interesting exhibition.

MEDICINE DRAMATIZED

"Thoughts for Tomorrow," by Dr. Norman R. Goldsmith, was a unique presentation of ten large colored cartoons presenting a new technic for dramatizing development in medicine and surgery. They illustrated some of his "Thoughts for Tomorrow," a weekly column completing its fourth year in the *Pittsburgh Medical Bulletin*, the official publication of the Allegheny County Medical Society.

The purpose of "Thoughts." Dr. Goldsmith said, "is to save busy doctors' time. Unable to read all the medical literature, one quick glance will give them essential information in an easily seen and remembered form." His procedure is to comb the medical literature, often research journals missed by the average practitioner, select some potentially significant article, condense it to its salient features and then dramatize it.

Transformed into a cartoon plus a caption, the message is quickly appreciated by the medical reader, yet is sufficiently distinctive to be long remembered. The entire message is given in a few words with a startling picture to clinch the memory thought image.

GASTRO - INTESTINAL SUTURES

Dr. Simon Reisler, of Indianapolis, with the aid of several colored drawings, presented his "continuous reverse-crossed suture—a new method of gastro-intestinal suturing." He criticizes the usual through and through suture, which is commonly employed in gastro-intestinal surgery, as being inadequate. He has developed what he calls the continuous reverse-crossed suture for the suturing of the stomach and the intestines in anastomosis or closure of these viscera. This stitch is employed as the innermost suture, which, he points out, is the most important layer, protecting the seromuscular suture, and, if properly made, should give thorough approximation, thereby avoiding such complications as postoperative hemorrhage, tissue necrosis, leakage and peritonitis. The latter are avoided by his method of suture.

PERITONEOSCOPY

"Peritoneoscopy," presented by Dr. John C. Ruddock and Dr. Maurice L. Malins, is a highly important method of diagnosis of intra-abdominal lesions. The technic was clearly described by the authors with the aid of illustrations and charts.

Their statistical data cover a series of 900 cases, with a mortality of 0.1 per cent, the youngest patient described being 6 months old and the oldest 85 years old. The procedure is performed in an operating room under local anesthesia, under strict surgical asepsis with proper preoperative preparation, and preliminary catheterization of the urinary bladder.

After introduction of the peritoneoscope, any fluid present is aspirated, and the peritoneal cavity is filled with air. Through this instrument one is able to examine the whole of the peritoneal cavity with the exception of retroperitoneal structures and the pylorus of the stomach, and to differentiate various pathologic lesions present; to obtain biopsies of solid organs of Montezuma, including all [illegible] a country with its individual [illegible] try to which Spain, [illegible] its mother country, given its best. [illegible] immense Latin culture had come [illegible] the means of conquering Spain.

The Conquest was begun in 1519 and consummated in 1521. Almost at once, in 1524 the Conquistador founded the "Hospital de la Purísima Concepción y Jesús Nazareno," at the memorable site called Huitzillan where he and Montezuma had their first meeting. The Hospital de Jesús, as it called nowadays, is the oldest *institution in America built for the purpose of* assisting the poor and relieving suffering.

Fourteen years after the Conquest was consummated, in 1535, don Antonio de Mendoza, the first viceroy, brought to Mexico the first printing press that operated in the whole of the Americas, one hundred and five years before the printing press began to operate at Cambridge.

On Jan. 6, 1536, the College of Santa Cruz de Tlaltelolco was inaugurated, the curriculum of which included a course in medicine.

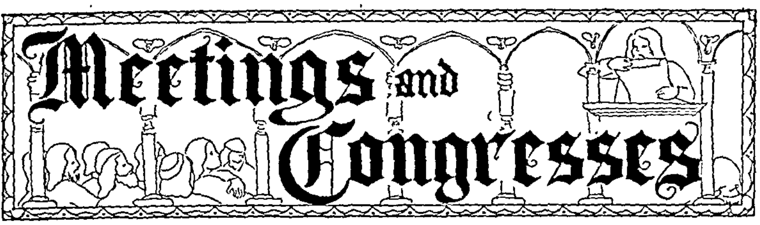
In 1551 a royal decree was issued ordering the founding of the Royal and Pontifical University of Mexico, with the same privileges and statutes as Salamanca University, at the time the best university in Spain and one of the greatest institutions of learning in Europe. The University of Mexico was the first in America, in accordance with the royal decree ordering its creation, dated Sept. 21, 1551. The college was opened on Jan. 25, 1553, and, to quote Clavijero, the historian, on that account men of great wisdom and learning were sent from Spain. On June 21, 1578, the University created a specialized course in medicine. In 1621 the course in surgery and anatomy was initiated at the request of Dr. Rodrigo Muñoz, in accordance with the royal decree of Philip III.

During the eleventh, twelfth, thirteenth and fourteenth centuries, science and the specialized branch of medicine reached their highest peak, *attaining their grandest splendor.* Spain was then, say Chinchilla and Zamacois, the metropolis and the retreat of all studious men, the mecca of those whose aspirations and ambitions were to acquire wisdom. The fifteenth and six*teenth centuries are most memorable in Spanish* history, for in them arms and letters shone supreme. Progress of medicine was due to a considerable extent to the Spaniards. By the end of the seventeenth century, Spain was the vanguard among all countries in regard to the science of medicine, and in the eighteenth century had a prominent place in the list of the most advanced nations. The Mexican *protomedicatus* had in the seventeenth century similar organization and like function as the *protomedicatus* of Castille.

In Spain the first college of surgery was founded in Cadiz, between 1747 and 1748; the second institution of its kind was the one at Barcelona, in 1760, and the third was New Spain's located in the City of Mexico, capital of the viceroyship, the first in America and a noteworthy distinction to New Spain. In 1768 Charles III signed the royal decree ordering the *creation of the Royal College of Surgery of New* Spain, which was inaugurated on April 10, 1770, having at its disposal for the purpose of teaching the Royal Hospital, built in 1534. The Royal Hospital was in existence for two hundred years, *up to 1787, when Archbishop Núñez de Haro* y Peralta incorporated it in the Hospital de San Andrés, the forerunner of the present General Hospital of Mexico.

MANUEL A. MANZANILLA, M.D., F.I.C.S., Honorary Fellow and National Regent, Mexican Chapter of the International College of Surgeons.

Charles III of Spain enacted by decree the writing of statutes and by-laws for the New Spain Royal College of Surgery, which were printed successively in Madrid (1791), Barcelona (1799) and Mexico City (1799). A leather-bound copy of this historical document is kept at the library of the School of Medicine in Mexico City. Dr. Fernando Ocaranza [illegible]



Meetings and Congresses

INTERNATIONAL ASSEMBLY OF THE INTERNATIONAL COLLEGE OF SURGEONS

IN CONJUNCTION WITH

THIRD ANNUAL ASSEMBLY OF THE UNITED STATES CHAPTER

New York, May 21-25, 1939, Roosevelt Hotel

ANDRÉ CROTTI, M.D., *International President*

FREDERICK M. DOUGLASS, M.D., *President, United States Chapter*

SCIENTIFIC PAPERS

Monday, May 22, 10:00 a. m.

ANDRÉ CROTTI, M.D., *International President, Presiding*

INVOCATION. THE REVEREND NATHAN A. SEAGLE, Rector of St. Stephen's Church, New York City. Assembly led in prayer.

SENATOR THOMAS IGNATIUS SHERIDAN, of the State of New York, then addressed the Assembly.

SENATOR THOMAS IGNATIUS SHERIDAN: It would be presumptuous on my part to attempt to discuss the details of your profession, except in an incidental fashion. Once one comes under the spell of either a medical man or a surgeon—whether one is fully conscious or whether one is under the immediate effects of an anesthetic—one is nothing more than a pawn in his hands, whether one is a lawyer, a former senator or any other member of the community. The surgeon has the faculty of applying an anesthetic without making one know it, and that is what happened to me. Before being aware, I found myself addressing you.

Your motto "Science knows no country," I dare say is no more typified by any place in this country than by New York City. I hope you will enjoy your stay, and that you will not confine your investigations to the hospitals. I wish you a hearty welcome to New York City and to New York State.

His Excellency DR. FRANCISCO CASTILLO NÁJERA, Ambassador from Mexico, was then introduced.

DR. FRANCISCO CASTILLO NÁJERA: I greet you in the name of the Mexican delegation. It is my great pleasure to meet many of my countrymen here. It is to them, who are in full practice and active in surgery, that the task of advancing Mexican surgery belongs. I greet you in the name of the Mexican scientific societies to which I belong, the National Academy of Medicine, the Mexican Academy of Surgery, and others. Let us hope that science will be the strongest link between our nations.

PRESENT DAY TRENDS OF SURGERY IN PULMONARY TUBERCULOSIS. DR. CONSTANTIN ILIESCU, Inspector General, Medical Service, Rumanian Army, Bucharest, Rumania.

This paper will appear in a later issue.

ANESTHESIA IN THE UNITED STATES NAVAL SERVICE. DR. ROSS T. McINTIRE, Rear Admiral, Surgeon General, United States Navy.

Read by DR. D. G. SUTTON, Captain, United States Navy. This paper appears elsewhere in this issue.

THE IMPORTANCE OF THE CADAVER IN SURGICAL TEACHING. DR. MIGUEL LÓPEZ ESNAURRÍZAR, Mexico City, Mexico.

This paper will appear in a later issue.

DR. MAX THOREK, M.D., *International Secretary, in the Chair*

ADMITTED TO FELLOWSHIP — MEXICAN CHAPTER

Dr. Donato G. Alarcon
Dr. Abrahim Ayala Gonzalez
Dr. Rodolfo Ayala Gonzalez
Dr. Benjamín Bandera
Dr. Luis Rivero Borrell
Dr. Matías Carrasco y de Mier
Dr. Luis Carrillo Azcárate
Dr. Gonzalo Castañeda (Hon.)
Dr. Francisco Castillo Nájera (Hon.)
Dr. Juan Farill
Dr. Darío Fernández Fierro
Dr. Francisco Fonseca García
Dr. Avelino Gavaldón Salamanca
Dr. Eduardo Gómez Jáuregui
Dr. Guillermo Lagarde
Dr. Alejo Larrañago.
Dr. Miguel López Esnaurrízar (Hon.).
Dr. Manuel A. Manzanilla (Hon.).
Dr. Manuel Martínez Suárez.
Dr. Manuel Matos.
Dr. Ignacio Millán.
Dr. Juan Mora y Ortiz.
Dr. Federico J. Molas Oliveras
Dr. Ignacio Morones Prieto.
Dr. José Ortíz Tirado.
Dr. José Rábago.
Dr. Octavio Rojas Avendaño.
Dr. Antonio Torres Estrada.
Dr. Mariano Vásquez.

Investiture and conferring of Honorary Fellowship on Dr. J. R. Goodall, of McGill University, Montreal, Canada.

Investiture and conferring of Honorary Fellowship on Dr. Miguel López Esnaurizzar, of the Mexican Academy of Surgery

MESSAGES FROM COLOMBIA

A message from the Faculty of Medicine of the International University of the Republic of Colombia was read by Prof. Dr. Dario Cadena, of Bogota, Colombia.

HONORARY FELLOWS

A list of surgeons given Honorary Fellowship, duly recommended and approved, was read by Dr. William Seaman Bainbridge and accepted by President Crotti.

ORATION ON SURGERY. DR. ANDRE CROTTI, Columbus, Ohio.

This address will appear in a later issue.

THE SURGICAL TREATMENT OF GASTRODUODENAL ULCER BY SUBTOTAL GASTRECTOMY. DR. JOSÉ LASTRA CAMPS and CAPTAIN ANTONIO M. RODRIGUEZ DIAZ, M.D., Havana, Cuba.

Read by Dr. Conrado Nuñez, of Havana, Cuba. This paper will appear in a later issue.

Monday, May 22, 2:15 p. m.

ANDRÉ CROTTI, M.D., *International President, Presiding*

ACTIVITIES OF MILITARY SURGEONS IN THE INTERNATIONAL CONGRESSES OF MILITARY MEDICINE AND PHARMACY. DR. WILLIAM SEAMAN BAINBRIDGE, New York.

This paper appears elsewhere in this issue.

THE SURGICAL RECONSTRUCTION OF THE ARTHRITIC PATIENT. DR. FRANK D. DICKSON, Kansas City, Mo.

This paper will appear in a later issue.

OPERATIVE CHOLANGIOGRAPHY: ITS CONTRIBUTION TO THE PHYSIOPATHOLOGY OF THE COMMON BILE PASSAGES (illustrated with lantern slides). DR. P. L. MIRIZZI, Córdoba, Argentina.

This paper appears elsewhere in this issue.

COMMON DUCT INJURIES: CAUSATION AND REPAIR (illustrated with lantern slides). DR. THOMAS E. JONES, Cleveland.

This paper appears elsewhere in this issue.

GENESIS OF ELECTROSURGERY. DR. JOSEPH RIVIÈRE, Paris, France.

This paper will appear in a later issue.

INVOLUTION OF THE CURVATURE OF THE STOMACH AS A COMPLICATION OF CHRONIC GASTRIC ULCER (illustrated with lantern slides). DR. Y. SEUDERLING, Helsinki, Finland.

This paper will appear in a later issue.

CONVOCATION

Monday, May 22, 9:30 p. m.

FREDERICK M. DOUGLASS, M.D., *President, United States Chapter, Presiding*

Dr. Benjamin I. Golden, of Elkins, W. Va., Grand Marshall, led the academic procession for the induction and reception of degrees.

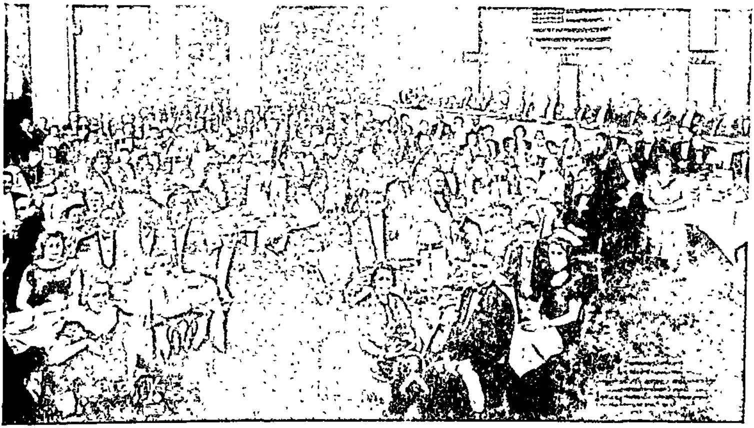
The Reverend Norman Vincent Peale, D.D., Pastor of the Marble Collegiate Church, New York City, offered the invocation.

ADMISSION OF CANDIDATES

Dr. Edward Frankel, Jr., of New York City, Executive Secretary, presented the candidates for Associate Membership, Membership and Fellowship.

ADMITTED TO FELLOWSHIP — UNITED STATES CHAPTER

Dr. Donald Taylor Atkinson, San Antonio, Texas.
Dr. William T. H. Baker, Pueblo, Colo.
Dr. George William Bancroft, Colorado Springs, Colo.
Dr. Hugh Gibson Beatty, Columbus, Ohio.
Dr. Ralph S. Breakey, Monticello, N. Y.
Dr. Thomas Frederick Broderick, Boston.
Dr. Harry Lewis Brooks, Michigan City, Ind.
Dr. Robert King Buford, Charleston, W. Va.
Dr. Earl L. Caddick, Quincy, Ill.
Dr. Anthony Joseph Cardinale, Brooklyn.
Dr. William J. Carrington, Atlantic City, N. J.
Dr. Earle L. Creveling, Reno, Nev.
Dr. Hugh Vincent Fall, Roswell, N. M.
Dr. George William Finke, Hackensack, N. J.
Dr. Egon Walter Fischmann, Chicago.
Dr. George Sanford Foster, Manchester, N. H.
Dr. Albert Dalbey Frost, Columbus, Ohio.
Dr. Dewell Gann, Jr., Little Rock, Ark.
Dr. Ralph Averill Gowdy, Miami Beach, Fla.
Dr. Walter R. Griess, Cincinnati
Dr. Edwin Albert Griffin, Brooklyn
Dr. Eugene Campbell Hartman, Parkersburg, W. Va.
Dr. Otto Rudolph Holters, Asbury Park, N. J.
Dr. Charles Elmer Holzer, Gallipolis, Ohio.
Dr. Julius Jarcho, New York.
Dr. William Jepson, Sioux City, Iowa.
Dr. George Herman John Joost, DeKalb, Ill.
Dr. Henry Dowling Jordan, Allentown, Pa.
Dr. Homer David Junkin, Paris, Ill.
Dr. Fred Oscar Kettelkamp, Colorado Springs, Colo.
Dr. Louis F. Knoll, Brooklyn.
Dr. Edward Bloomfield Liddle, Colorado Springs, Colo.
Dr. Goethe Link, Indianapolis.
Dr. William Randolph Lovelace, Albuquerque, N. M.
Dr. Oswald Swinney Lowsley, New York.
Dr. Maxwell Maltz, New York.
Dr. Charles Edward Nagel, Great Falls, Mont.
Dr. William Alfred Neill, Toledo, Ohio.
Dr. Robert M. Rogers, Brooklyn.
Dr Milton M. Rosenberg, Scranton, Pa.



Banquet of the International College of Surgeons during the International Scientific Assembly, Hotel Roosevelt, New York City, May 23, 1939

William Seaman Bainbridge, A.M., Sc.D., M.D., F.I.C.S., Captain, M.C.-F., U.S. Navy Reserve, International Treasurer of the International College of Surgeons

PRESIDENTIAL ADDRESS BY DR. ANDRÉ CROTTI

To all of you who have come from far and near let me extend a hearty welcome. This occasion marks a historical date in the annals of the International College of Surgeons, because this is the *First International Assembly*. It is true that the United States Chapter of the International College of Surgeons has held several meetings in the past two years. It is also true that the International College of Surgeons held an emergency executive meeting last October in Philadelphia to adopt a new Constitution and new By-Laws to replace the old ones which were regarded as defective; this, however, is the true first International Assembly. That the present scientific meeting of the College and this gathering of tonight have a truly international character, no one can question. One has only to look at the scientific program of the past two days, and one needs only to cast a superficial glance at the distinguished people, here assembled, to become convinced of this very fact. It is especially to you foreign members and foreign guests that the College is grateful, because by your active participation in the scientific activities of the College in the past two days, and also by your presence here tonight, you have imparted to this Assembly a dignity and a distinction that nothing else could have done. I assure you that your active, as well as your moral, support will spur the College toward better and greater things. But, uppermost, the College construes your participation in the scientific program and your presence here tonight as an unequivocal testimonial of your approval of the College and its aims.

Founded in Geneva, in 1935, the College is still in its infancy. Judging, however, by its accomplishments of the past few years, and by the glowing success of the present International Assembly, one will have to admit that the Col-

DR. MORTIMER M. KOPP, Brooklyn.
DR. EDWARD L. LEBOLD, Salem, Ore.
DR. WILLIAM HAROLD MEFFLEY, Toledo, Ohio.
DR. NATHAN L. SHULMAN, Union City, N. J.
DR. OXEY P. SMITH, Troy, N. Y.
DR. NICHOLAS S. VITALE, St. Louis.
DR. SAMUEL DAVID ZUKER, Toledo, Ohio.

PRESIDENTIAL ADDRESS BY DR. FREDERICK M. DOUGLASS

OF this College it might be said with perfect truth that from among the many who aspire to the honors of membership only a few are called and fewer still are chosen.

FREDERICK M. DOUGLASS, M.D., F.A.C.S., F.I.C.S., President of the United States Chapter of the International College of Surgeons.

It bestows nothing as a gift of hand. Upon its every rank, upon the associate memberships, the memberships, and doubly upon the fellowships, there is a price that only a few surgeons may hope to pay.

It is not enough that a man be able to handle knife and suture with godlike cunning. We demand the utmost skill of him, but we demand much more than that. We look beyond skill to the hands that wield skill. And if those hands are blameless and clean, we search beyond them. We search for the pure heart and principled brain that exemplify—as nearly as it is possible for imperfect man to exemplify such moral grandeur—the Oath of Hippocrates.

Our price is Integrity.

Our price is a life dedicated to the faith that lege of Surgeons desires to have among its membership not alone the surgeons of great prominence but also those surgeons of lesser caliber and, uppermost, those surgeons who are just coming into the field. It is in the latter men that the College is most keenly interested, not only because they represent the future of surgery, but because they need guidance and encouragement. They are still in sore need of opportunities to learn The College feels that it can help them, and the time to help them is during these few years when they are out in the world alone, trying to make a place for themselves.

The dangerous period for a young surgeon is the first ten years of his practice. These first few years are full of difficulties, of discouragements, of temptations to take the short cut by throwing overboard the dictates of the code of morals and of ethics. The soul of a young surgeon is like the soul of an adolescent. Let me quote the verses of a great French poet, Alfred de Musset

Le coeur d'un homme vierge est un vase profond,
Si la première eau qu'on y verse est impure
L'ocean passerait sans laver la souillure
Car l'abyme est immense et la tache est au fond

("The heart of a virgin man is like a deep vase;
If the first water poured into it is impure
The ocean could pass through it without cleansing it,
Because the abyss is deep,
And the stain remains at the bottom")

This is only too true of the young surgeon. In fact, it is so true that one can easily foretell what a young surgeon is going to be when he will have reached his maturity. If, during the first difficult years, the young surgeon remains morally and ethically clean, and seeks success through industrious and legitimate means, his future is quite safe. *This young surgeon will be* some day a leader

"By labour, vertue may be gained,
By vertue, glorie is attained"
—*George Wither, 1635*

In consequence, the College, through the formation of *surgical guilds* throughout the country, seeks to impart knowledge to its young associates I do not need to go into much detail concerning these surgical guilds. Suffice it to say that they represent intermittent postgraduate courses at which the young surgeons will be not only listeners but also performers, critically watched by their elders

It is here that the leaders finally find the opportunity to pay their indebtedness to the profession which has made them great. Furthermore, their personal contact with the young surgeons will do much to stimulate the healthy ambition to progress, and will encourage them to remain steadfast in the observance of the ethics of their profession, and thereby retain not only their own self-respect but also the respect and confidence of the medical profession and of the public.

Also, the International College of Surgeons desires to establish closer relationship among the surgeons of the world. This is to be obtained through the publication of the JOURNAL OF THE INTERNATIONAL COLLEGE OF SURGEONS, and through scientific gatherings such as this one. There is nothing like personal contact to clarify opinions and to smooth out difficulties; one can come much nearer to getting the real estimate of a man by coming face to face with him than by reading his writings. Many lasting and solid friendships have thus been established, while, on the other hand, many exaggerated values have flattened out like a soap bubble. Molière, the great French fabulist, had already sensed that when he wrote:

De loin c'est quelque chose
Et de près ça n'est rien.

("From afar, it looks big,
But from near it is nothing.")

The International College of Surgeons merely wishes to add its bit to what other organizations are doing for the advancement of surgery, and it wishes to do it in its own way. There is so much to be done that the little the College will accomplish will, by no means, finish the task. There will remain plenty for others to do.

We are all seeking the same object, namely, the progress of this great profession of ours. That is the sole and ultimate goal which we are all striving for, no matter if we belong to the International College of Surgeons or if we belong to other affiliations.

This being the case, the sooner we all join hands, the sooner the goal will be attained.

Each one of us, individually and collectively, loves this great profession of ours, because it is beautiful, because it is great and noble. We do not love it halfway; that is impossible; surgery ensnares its followers wholly. We love our great profession as the sailor loves his great open sea, knowing full well all of its beauty and all its dangers. We love it as the soldier loves the battle with all its terrors and with all its triumphs The surgeon is the soldier battling Death In this struggle, he is often stronger than Death, but also he knows only too well that the pangs of defeat are often waiting around the corner The life of a surgeon is full of beauty, of enthusiasm, of triumphs, of catastrophies, of disappointments. Great are the responsibilities of the surgeon

In consequence, any one who will strive for the advancement of surgery undertakes a wholesome and humanitarian task.

Ladies and Gentlemen, the International College of Surgeons is committed to such a task.

ANDRÉ CROTTI, M.D., *International President, in the Chair*

PRESIDENT CROTTI welcomed the new Members and Fellows and stressed their obligation to surgery and mankind at large. Presentation of diplomas.

MESSAGES

DR. MAX THOREK, International Secretary, read the following messages.

Greetings to the International College of Surgeons from Past-President Prof. DR. ARNOLD JIRÁSEK, of Prague, Czechoslovakia:

"I am sorry, indeed, not to be able to participate personally in the activities of this meeting, which offers such a splendid opportunity of being in touch with so many distinguished representatives of surgery. Despite this, I wish to express my profound respect for your work and my appreciation to those who are endeavoring to raise the standards of the world's surgery, which is influencing the growing generation. This has always been proof of your spirit and pioneer work.

"Wishing the Assembly and its activities all success and extending to you my kindest thoughts and friendly remembrances and with most cordial greetings."

Greetings from DR. J. C. McCRACKEN, from Shanghai, China, who is our Regent in that part of the world, who writes and requests that his best wishes be extended for a successful meeting.

PROF. DR. JORGE E. CAVELIER, Dean of the Faculty of Medicine, of Bogota, Colombia, cordially greets the Members of the International College of Surgeons and expresses wishes that the work and humanitarian aims which primarily guide this meeting will be crowned with complete success and will redound to the benefit of the medicosurgical sciences.

DR. PROBODH CHANDRA DAS, of Calcutta, India, writes as follows:

"The International College with its high ideals is sure to become an influential organization and in the very near future will undoubtedly play a leading rôle in the advancement of the knowledge of different branches of surgery with a view of minimizing the sufferings of humanity.

"I send from my sick bed in this distant land of India my sincere wishes for the success of this momentous Assembly meeting."

PROF. DR. ALEXANDER STANISCHEFF, Director of the University of Sofia, Sofia, Bulgaria, writes:

"It is with great regret and much distress that I find I shall be unable to be with you and among my fine American colleagues, whose aims to cultivate the best in our profession are observed by me.

"I personally regret sincerely, as does our University also, that you who do such honor to our profession cannot participate in the celebration of the fiftieth anniversary of our beloved University. However, we believe, and are sure that you do also, that in spite of the impossibility of direct personal participation, our hearts will be very close in these hours and days of celebration, both during the ceremonies here and during the scientific sessions of the International College of Surgeons.

"We are assured that you will continue in the future to work not only for the advancement of pure science and art but also in the cultivation among the people of those feelings and virtues which will ultimately give to mankind the desired peace and tranquility."

PROF. DR. RUDOLF NISSEN, of Istanbul, Turkey, Vice President of the International College of Surgeons, cables best wishes for the success of the Assembly meeting of the International College of Surgeons.

PROF. DR. FELIX MANDL, of Palestine, Jerusalem, cables his greetings and sincerest good wishes to the Fellows and Members of the International College of Surgeons in session in New York City.

MEXICAN CHAPTER

DR. MANUEL A. MANZANILLA, of Mexico City, Mexico, presented for admission to the College the newly organized Mexican Chapter.

ADDRESS BY DR. MANUEL A. MANZANILLA

The aboriginal people of Mexico, because of their civilization, laws and government, were considered the most outstanding people in the American Continent, before the discovery of the New World. But, notwithstanding all that is said to proclaim their high level of culture, this was almost nil as compared with the powerful civilizing influence presently brought about by the Conquest. I believe, with the new Mexican generation which has happily lived under the limpid sky of our past and has nourished its mind on the reminiscences of our ancestry, that Hernán Cortés, the Conquistador, is the greatest figure in our history, the creator of our nationality. The legacy received by Mexico when acquiring its independence, inheritance which was indeed the fructification of the work performed by that Great Captain, consisted of a territory ten times as large as that which constituted the kingdom

Palestine? The renaissance of Turkey? The classic ghosts of Greece? Of the Andes? In the huts or castles of Mexico? Or the isolation of scattered islands? The shadow of Egypt's past? Or the aroma of Brazilian coffee fields or Argentinian natural beauties? No matter where we work, *ours is the common bond.* Because of this common bondage we sons of Aesculapius must strengthen our bonds of relationship, just as the heart keeps the blood circulating in the body from head to foot. We must take our idea of cooperation from that human body that we serve in the name of science.

Eventually, our society will stand as a unit of scientific perfection and power because of its unselfish, self-sacrificing, fraternal and mutual labors toward the glory of human endeavor for humanity's sake.

When we have thus constituted our society and ourselves into a mighty machine of mercy and learning, freely disbursed, from it may eventuate such a leverage of health and hope and welfare that all the peoples of the world will lay their laurels at the pedestals of our endeavors. Like the waters we drink, the air we breathe and the earth we tread, so are the science and the art of the surgeon a real and a sacred gift from the Infinite. Since this is so, this great gift must be used, in so nearly as finite men can humbly imitate the Infinite, in a style and manner patterned after the generosity and the patience with which the universe is surrounded and from which it was built.

Gentlemen, let me quote from "Ye Weary Wayfarer":

"Life is mostly froth and bubble,
Two things stand like stone —
Kindness in another's trouble,
Courage in our own!"

ADDRESS BY
COL. DR. JULES VONCKEN

Science has no country, neither has charity. Science permeates the world and wishes it to be beautiful, great and just It is for that country that we meet in these International Congresses with the clear vision of worthily representing our nations and our scientific and humanitarian aspirations.

We are surgeons, and we are conscious of the altruistic mission of our profession. Our ideal, also that of all military surgeons who have lived through anguishing hours during the World War and who have witnessed its hardships and its tragedies, is to exert the influence of our calling in humanizing warfare.

We leave America with the hope that our appeal for peace and for charity will be heard and that the world's greatest republic will help us to fortify our efforts toward peace. Those efforts for peace are the goal of all the small nations of the world.

ADDRESS BY
DR. FRANCISCO CASTILLO NÁJERA

I am embarrassed to speak before this élite group, although I know that the men of science are very kind people. The words I say do not belong to me. They belong to men to whom I have been talking. I have been with these outstanding men of science, coming from all over the country.

The necessity of beautifying mankind is urgent. It is felt by men everywhere, but it is particularly precious because it is best understood by the medical men. They have ideas and ideals, and to better express them and put them into practice they have formed not only national societies but also international societies.

We are living in terrible times, and some will say that we are facing the destruction of civilization, and perhaps of mankind. But that is not possible. It might have been possible during the Middle Ages, when the world was not completely unified, geographically, and when America was not discovered.

Some will say that it is the law of nature to fight; but that is not true. If we examine more carefully the state of mankind, proceeding from the lower animals to the highest—that is to say, the most enlightened men—we shall find it is mostly man who fights against man. There have been fights, yes, between animals, but never has a group of animals been seen going against another group of animals. The instinct of self-preservation is stronger than any tendency to destruction.

Nowadays, all the important activities of the individual family are connected with some medical achievement. No one can deny that. And I think that the medical profession in this special age we are going through has become a factor in the progress of mankind.

This manifestation of the International College of Surgeons is proof that humanity will become unified, and it is going to be realized in the very near future. It is impossible to have destruction of mankind in mind. And if medicine is a scientific art, the artistic part belongs to the surgeon. He is a sculptor; he is like a magician; he has his special material to work on, human flesh.

The military surgeon is the only soldier who can work in favor of peace. The well known phrase of Pasteur, "Science has no fatherland," is very true. Pain has no fatherland, either. In misery, in sickness and in pain, men are only human beings It must be our [illegible] the duty within the limits of the [illegible] each one of us.

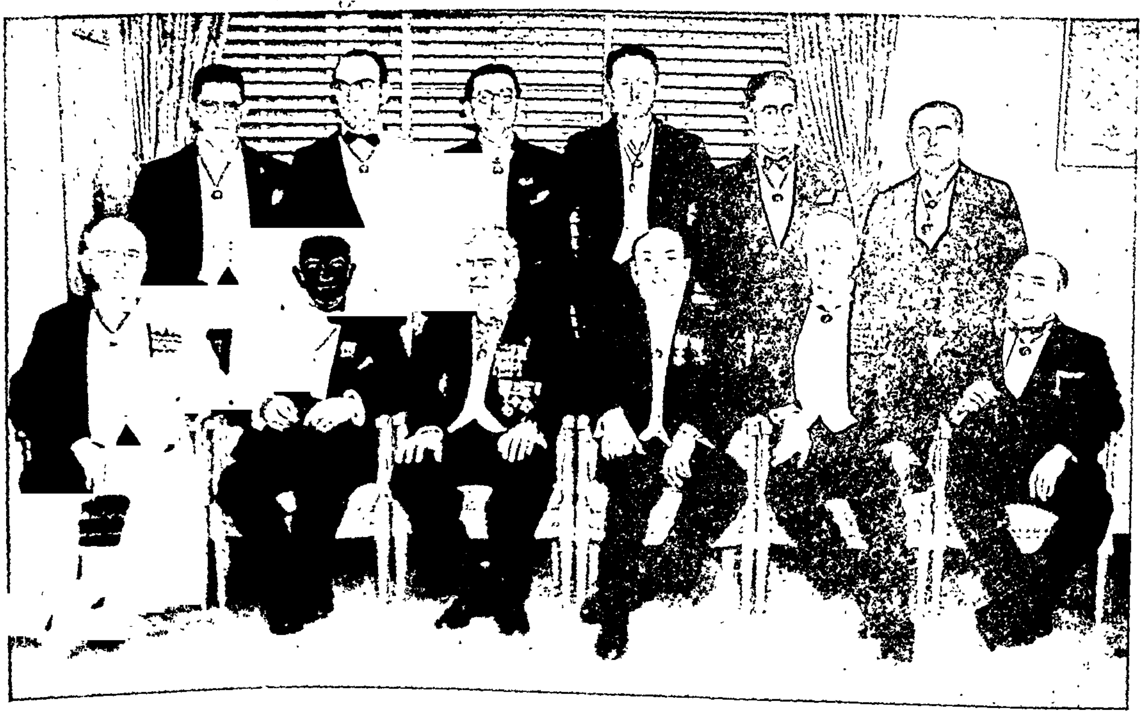
that the Faculty of Medicine of today comes in direct line of descent from the Royal College of Surgery.

During the second half of the past century there flourished in Mexico City the Larrey Society, of which our eminent surgeon Montes de Oca was a member, and in the dawn of the twentieth century brilliant achievements were attained by the Mexican Society of Surgery, two of the initiators of which were don Julián Villareal and don Ulises Váldes, who later were among those who laid the foundations of the present Academy of Surgery, the supreme national institution which now serves as the intellectual guide, to enlighten the path, support and cultivate the art of surgery, under the roof of our Alma Mater, the long-lived School of Medicine.

Mexico possesses its own surgical history. Endowed by Destiny with ancient disciplines and restless, ardent desires, it is deeply grateful for the honor bestowed upon it by this most learned International College of Surgeons, in reserving a place for Mexican members. The Mexican Chapter was initiated under the chairmanship of Dr. Gonzalo Castaneda, eminent master, who was also the president of the Mexican Academy of Surgery on its founding.

A representative group of Mexican surgeons take part in the International Assembly of the College held in this great country, in this magnificent city of New York, imperial because of its might, admirable because of its endeavor, a group of surgeons representative of the ancient culture of a young nation that perpetuates the tradition of Alonso Quijano, the Virtuous, immortal figure of Cervantes' romance of chivalry and knight-errantry. Latin we are by heritage, but universalist by tradition. Thus, under the guardianship of the noble aphorism of Pasteur which has become the ideal of the College, accept as a token of cordial friendship our warm greeting with our most earnest desires for the everlasting glory of this illustrious institution; *La science n'a pas de patrie parce que le savoir est le patrimoine de l'humanité, le flambeau qui éclaire le monde.*

Distribution of diplomas to the Mexican Chapter, by Dr. Francisco Castillo Nájera, Ambassador from Mexico.



Committee of the Mexican Chapter of the International College of Surgeons and officers. Seated, from left to right, Dr. Albee, Dr. Thorek, His Excellency the Ambassador from Mexico, Dr. Castillo Nájera, Drs. Crotti, Bainbridge and Lapenta. Standing, Drs Rábago, Morones Prieto, Manzanilla, López Esnaurrízar, Lagarde and Torres Estrada

VOTED: That the definite date for the Annual Meeting of the United States Chapter be fixed by the Executive Council.

ANNOUNCED: By Dr. Benjamin I. Golden, that if any of those present were Reserve Officers they could get active duty credit for attending the session, and that he had slips to distribute to those entitled to same.

VOTED: That the Executive Council be authorized to offer such prizes for scientific essays, comprising original work, as they see fit, and for the best scientific exhibit at the next Assembly.

VOTED That a letter of appreciation be directed to Dr. J. David Beatty, of Los Angeles, for his fine work in popularizing the JOURNAL.

VOTED: That a suitable emblem be designed and provided, to be worn by Members and Associate Members.

VOTED: That appreciation be extended to Dr. Edward Frankel, Jr., and Dr. Earl B. Craig for the excellent caps and gown they designed and registered in Washington as the distinctive insignia of the International College of Surgeons.

ADJOURNMENT (*7:00 p. m.*)

SIXTH BIENNIAL CONGRESS OF THE INTERNATIONAL HOSPITAL ASSOCIATION

The **Sixth Biennial Congress of the International Hospital Association** will be held in Toronto, Canada, September 19-23, with headquarters at the Royal York Hotel, under the presidency of Dr. Malcolm T. MacEachern, of Chicago, and the patronage of Lord Tweedsmuir, Governor-General of Canada.

The following committees will be in charge:

Toronto Committee on Local Arrangements: Executive Committee· Dr Fred W. Routley, Past President, Canadian Hospital Council, *Honorary Chairman;* Dr W. S. Caldwell, Director, Canadian Red Cross Society, Ontario Division, *Chairman;* Mr. Carl I. Flath, Superintendent, Wellesley Hospital, *Secretary-Treasurer;* Dr. G. Harvey Agnew, President, American Hospital Association, *Ex Officio.*

Subcommittee Chairmen. Dr Fred W. Routley, Canadian Red Cross Society, Ontario Division, *banquet,* Miss Pearl Morrison, Hospital for Incurables, *educational and gadgets exhibits,* Mr. A. D. Kelly, Ontario Medical Association, *entertainment;* Mr. Arthur Heeney, architect, *exhibits and meeting halls,* Mr. C J. Decker, Toronto General Hospital, *golf;* Dr W. J. Dobbie, Toronto Hospital for Consumptives, *hospital tours;* Dr. C. B. Farrar, Toronto Psychiatric Hospital, *information and registration;* Dr Fred A. Logan, Toronto General Hospital, *interpreters and translations.*

Committee of the American Hospital Association on International Hospital Relations. Chairman. Mr. Howard E Bishop, Sayre, Pa., Administrator, Robert Packer Hospital. *Members:* Dr. G. Harvey Agnew, Toronto, Secretary, Department of Hospital Service, Canadian Medical Association, President, American Hospital Association; Dr. Robin C. Buerki, Chicago, Director of Study, Commission on Graduate Medical Education, President, American College of Hospital Administrators; Dr. Bert W. Caldwell, Chicago, Executive Secretary, American Hospital Association; Dr. Malcolm T. MacEachern, Chicago, Associate Director, American College of Surgeons, President, International Hospital Association.

The officers of the International Hospital Association are as follows:

Honorary Presidents: Dr. W. Alter, Buchschlag, Hessen, Germany, Geheimer Regierungs-und-Medizinalrat; Dr. E. H. L. Corwin, New York, Secretary, Academy of Medicine; Dr. G. von Deschwanden, Lucerne, Switzerland; Sir Harold Pink, J.P., London, England, Chairman of Council, British Hospitals Association; Dr. René Sand, Brussels, Belgium, Secretary-General, Ministry of Health.

President: Dr. Malcolm T. MacEachern, Chicago, Associate Director, American College of Surgeons.

President-Elect Dr. Ralf Zeitler, Berlin, Vizepräsident des Deutschen Gemeindetags

Honorary Secretary: Dr. W. Alter, Buchschlag, Hessen, Germany, Geheimer *Regierungs-und-*Medizinalrat.

Honorary Treasurer: Mr. Edmund Hrisch, Bexhill-on-Sea, England, chartered

ADJOURNMENT

Dr. Fred H. Albee, of New York City, President-Elect, was introduced and acknowledged the honor with brief remarks, after which the Convocation came to an end.

Fred H. Albee, M.D., Sc.D., LL.D., F.A.C.S., F.I.C.S., International President-Elect of the International College of Surgeons.

SCIENTIFIC PAPERS

Tuesday, May 23, 9:45 a. m.

ANDRÉ CROTTI, *International President, Presiding*

PLANNING THE SURGICAL DEPARTMENT OF THE MODERN HOSPITAL (illustrated with lantern slides). DR. WILLIAM H. WALSH, Chicago.

This paper appears elsewhere in this issue.

THE RESULT OF ANTERIOR PITUITARY TRANSPLANTS ON THE ANTERIOR CHAMBER OF THE EYE (with microscopic and slide demonstrations). DR RAFAEL E. LÓPEZ, Caracas, Venezuela.

This paper will appear in a later issue.

FRED H. ALBEE, M.D., *International President-Elect, in the Chair*

SURGICAL RESTORATION IN WAR INJURIES OF THE MANDIBLE, WITH SPECIAL REFERENCE TO THE FIXATION OF EDENTULOUS FRAGMENTS. DR. EMIL MAJOR, Budapest, Hungary.

This paper will appear in a later issue.

BONE TRANSPLANTATION IN DISEASES OF THE OSSEOUS SYSTEM (illustrated with lantern slides). DR. A. FAHRI AREL, Istanbul, Turkey.

This address will appear in a later issue.

COMPLICATIONS OF OPERATION FOR ACUTE APPENDICITIS. DR. JULES VONCKEN, Colonel, Service de Santé, Belgian Army, Liége, Belgium.

This paper will appear in a later issue.

Tuesday, May 23, 2:20 p. m.

ANDRÉ CROTTI, M.D., *International President, in the Chair*

PIONEER SURGERY IN SYRIA. DR. A. A. ALTOUNYAN, Aleppo, Syria.

This paper appears elsewhere in this issue.

SARCOMA VERSUS STROMATOUS ENDOMETRIOSIS OF THE UTERUS (illustrated with lantern slides). DR. J. R. GOODALL, Montreal, Canada.

This paper appears elsewhere in this issue.

SURGERY OF CAROTID BODY TUMORS (illustrated with lantern slides). DR. R. W. McNEALY, Chicago.

This paper will appear in a later issue.

OSTEOCHONDROBLASTOMA METACARPAL PRIMITIVE. DR. MANUEL A. MANZANILLA, Mexico City, Mexico.

This paper will appear in a later issue.

WHITE BILE. DR. FRANCISCO CASTILLO NÁJERA, Ambassador from Mexico.

This paper appears elsewhere in this issue.

BANQUET

Tuesday, May 23, 10:30 p. m.

ANDRÉ CROTTI, M.D., *International President, Presiding*

WILLIAM SEAMAN BAINBRIDGE, M.D., *Toastmaster*

Invocation was offered by the Reverend Father Joseph Rooney, Headmaster, St. Francis Xavier's College, New York City.

News and Personals

MEXICAN CHAPTER OF THE INTERNATIONAL COLLEGE OF SURGEONS

As stated elsewhere in this issue, a meeting of a number of prominent Mexican surgeons was held in Mexico City, and a chapter, *to be known* as the **Mexican Chapter of the International College of Surgeons** was formed. Its members represent outstanding surgeons garnered from the members of the National Academy of Medicine and from the Mexican Academy of Surgery.

The following officers were elected: Dr. Gonzalo Castañeda, President; Dr. Luis Rivero Borrell, Vice President; Dr. Francisco Fonseca García, Secretary; Dr. Miguel López Esnaurrízar, Treasurer.

The national regents elected were: Drs. Manuel A. Manzanilla, Gonzalo Castañeda and Miguel López Esnaurrízar.

The following specialty regents were elected:

Dr. Dario Fernández Fierro, general surgery; Dr. Luis Rivero Borrell, genito-urinary surgery; Dr. Donato G. Alarcón, thoracic surgery; Dr. Juan Farill, orthopedic surgery; Dr. Abrahim Ayala González, gastro-enterology; Dr. Mariano Vázquez, neurosurgery; Dr. Antonio Torres Estrada, ophthalmology; Dr. Federico J. Molas *Oliveras*, otorhinolaryngology; Dr. Luis Carrillo Azcárate, industrial surgery; Dr. Benjamín Bandera, anesthetic surgery; Dr. Manuel Martínez Suárez, oral surgery.

A charter was obtained and by-laws were adopted, which are in harmony with the charter issued to the parent body in Geneva in 1935.

Dr. Chevalier Lawrence Jackson, clinical professor of broncho-esophagology of Temple University, Philadelphia, conducted a course in broncho-esophagology at the Hôpital Necker-Enfants-Malades, Paris, from July 3 to 13, held under the auspices of the Association d'enseignement des hôpitaux de Paris. Assisting were Drs. Fernand Eeman, of Ghent, da Costa Quinta, of Lisbon, J. Vialle, of Nice, and A. Soulas, of Paris, formerly assistants of Dr. Jackson in Philadelphia. Lectures and demonstrations were given in French and English, with explanations in Spanish, Portuguese and German.

The French League for the Study of Cancer has awarded the Amerongen Prize of 100,000 francs to **Prof. A. H. Roffo,** Director of the Institute of Experimental Medicine for the Study and Treatment of Cancer at the University of Buenos Aires, for his memoir "Development of Malignant Tumors, Carcinoma and Sarcoma, Through Food Ingestion." The Amerongen Prize was destined by its founder as a recompense for work affirming with certainty that canned or chemically treated foods have or have not an influence on the genesis of cancer

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The French Government has bestowed on **Prof. Jules Bordet** the Grand Cross of the Legion of Honor. **Professor Bordet** is Director of the Pasteur Institute of Brussels, and was awarded the Nobel Prize in medicine. His pupils, colleagues and French friends have arranged to have a medal struck with his portrait as a testimonial to their admiration for his scientific work, his splendid accomplishments in teaching and his loyal friendship for France.

Competition for the **Umberto I Prize** was opened by the Rizzoli Orthopedic Institute of Bologna, Italy, January 1, to close December 31 This prize is offered for the best work or invention in orthopedics." Foreign and Italian scientists are invited to compete. Application for information should be made to the president of the Rizzoli Institute, Bologna.

lege, though still an infant, is a very lusty one, indeed. No sign of rickets, no sign of hypothyroidism in him. It bears all the characteristics of a vigorous child, which augurs well for its future.

The reason for the amazing and rapid success of the College lies in the fact that the College fulfils a real mission. Let me explain.

The College feels that any man who has attained great prominence in the field of Surgery or of Medicine owes his success to himself first, and to the medical profession second.

To himself first: Indeed, no one can attain high proficiency in his calling if he himself does not go through the necessary sacrifices of hard work, self-denials, etc., which will gradually and slowly lead him to the mastery of his art.

But when this is done, it is the medical profession which pulls out of today's obscurity the celebrity of tomorrow. It is the medical profession which tells the public to have confidence in the skill of this still unknown man. It is the medical profession which supports him, defends him, believes in him, and it is through the medical profession that this very man attains the heights of prominence.

In consequence, I say that man owes much to his colleagues. He has contracted a real debt.

Now, what can he do to show his gratitude, to discharge a part of his indebtedness? It is very simple. He must do for the medical profession what the medical profession has done for him. He cannot remain selfishly aloof at the summit of his glory and ignore that there are thousands of young surgeons who are passing through the arduous and thorny path, which he once followed. That maturity of judgment, that large experience obtained by bitter prices paid by others, must not be allowed to die prematurely; these must be placed at the service of the younger generation of surgeons before their owner passes on. Only in so doing will the great leader fill his full mission, which is to heal the sick and to impart knowledge to the younger surgeons.

With this in mind, the College regards itself as a school, and not merely as a Pantheon where the eligibles come to peacefully rest, crossing their arms on their chests, and from the height of their grandeur looking down with condescension upon the passing flow of surgical humanity and saying to each other: *Non sunt digni intrare in nostro docto corpore* ("They are unworthy to belong to our learned body").

The College thinks in terms of education and not in terms of self-adulation. No one is too great to serve. The College gladly and justly recognizes what other medical and surgical organizations, especially the American Medical Association and the American College of Surgeons, have done in that field of education. The College, however, feels that much remains to be done, and feels that it can do its part toward the betterment of surgical standards, not only in this country, but also all over the world, since the College is international. The International College of Surgeons bears malice to no one; it recognizes that academic freedom and intellectual liberty are the rightful possession of every one. Any one who for selfish reasons attempts to throttle that academic freedom and that liberty of thought and action resorts to methods which smack too much of trade-union tactics, and which the College regards as unworthy of any self-respecting and high-minded member of the profession. The College estimates that the intrinsic value of a man is the only thing that counts. It feels that the value of a man, derived through extraneous channels such as political affiliations, cliquism, etc., is only an extrinsic value, and consequently irrevelant to the College.

Surgery is the grandest and noblest profession in the world. It deals constantly with life, with death, and with the health of the patients. It is full of emotions, at times sweet at other times tragic. It is thrilling by the diversity and by the profoundness of the problems encountered; it is fascinating because it taxes to the limit the skill and technical ability of its followers; it is a mission of the highest type, since it requires the conscience of an honest man and the understanding soul of a Sister of Charity. Indeed, an unquestioned moral solidity is the fundamental requirement of a truly high class surgeon. Do not think that the moral responsibility of the surgeon is involved solely during the surgical act; no, it begins as soon as he decides that an operation must be performed.

It is then, when face to face with his own conscience, he decides to intervene that the fate of the patient is being decided. Now, if the conscience of the surgeon has been dulled, if mercenary or selfish reasons are the guiding motives in that decision, and if the operation is undertaken in the face of inadequate competency, one can easily foresee that an unnecessary, tragic ending may well be the result of such a decision.

Furthermore, no one can always foretell what the difficulties encountered in a given operation are going to be. They may be so unexpected, so sudden, so complicated that they may tax all the resources of the surgeon. Since superiority is the capacity of rising to an emergency, only that patient will have the best chances of surviving who is in the hands of a superior surgeon. And what constitutes a superior surgeon? The superior surgeon is the one who has conscience, knowledge, skill and experience. If a patient died at the hands of a dishonest and inadequately trained surgeon, manslaughter, perhaps murder, has been committed.

With this in view, it will become perfectly clear to every one why the International Col-

FOREIGN LETTERS

PARIS

(From Our Regular Correspondent)

May 5, 1939.

Ten Thymectomies

In the cases of ten patients, all adults, reported by Leriche and Young (*Mém. Acad. de chir.* 65:329 [March] 1939), in which thymectomy was performed, the thymic tissue had remained active. In three cases there had been general disturbances of growth. These have been, if not cured, at least notably benefited, by thymectomy. In two of three cases of ankylosing polyarthritis, thymectomy brought about improvement, and the same success was obtained in three cases of polyarthritis deformans. In a case of generalized scleroderma in a man aged 58, the thymus showed signs of activity. The skin was notably softened after the operation. In the cases of those patients with polyarthritis, the parathyroid was found to be absent at operation and was enclosed in a persistent thymic lobe—a condition due to embryologic disturbance of development. These results are encouraging, though still temporary. Time will tell whether they are permanent. They give interesting information as to the prolonged activity of the thymus gland.

Masculinizing Tumor of the Ovary

A girl 14 years of age became amenorrheic and obese. At 16 years of age she showed progressive masculinization, with hypertrichosis, change of voice and mental and emotional disturbance. She had a beard, which she shaved daily, a small, flat breast and a lengthened clitoris. The uterus was not palpable. Roentgenograms showed no abnormality of the sella turcica. At laparotomy a small ovarian tumor the size of an orange was removed. Five weeks after the operation the menses returned, and gradually everything became normal, including the clitoris and hypertrichosis.

The tumor showed a mixed composition. It had some foci resembling the interstitial cells of the testes. Luzuy (*Mém. Acad. de chir.* 65:26 [Jan.] 1939) classifies this tumor among the male tumors, called arrhenoblastomas by the German authors, which produce a picture analogous to that described by Luzuy and in which demasculinization constantly follows intervention. A few of these patients have been followed for a short period. There have been no recurrences, and one of the patients became pregnant. It is apparent that the male hormone secreted by the tumor puts the ovary at rest, suppresses the sources of folliculin, interrupts the genital cycle and acts on the secondary sexual characters. The etiology is as yet hypothetic.

Professor Laignel-Lavastine Honored

On the occasion of the recent election to the Academy of Medicine of Professor Laignel-Lavastine, his pupils and friends presented him with a gold medal. It is a pleasure to see the brilliant career of this teacher thus rewarded. His scientific activities, his culture and his high-mindedness are matched by his courtesy and kindness.

Asepsis of Air of Operating Rooms: The Closed Mask

Surgeons and their assistants automatically impair the asepsis of operating rooms, according to Hamant and Grimault (*Mém. Acad. de chir.* 65:239 [Feb.] 1939). The microbes which they scatter in the air may be numerous and noxious and find a culture medium in the aerial solutions. The indispensable ventilation of the operating room leads to the same result. There are no perfect masks either for the surgeons or for ventilation. Fredet has judged it necessary to isolate the surgeon and his assistants, making them breathe through a special mask which consists of a bag covering the greater part of the face and head. A rubber tube at the level of the forhead furnishes a supply of fresh air under pressure. Another tube serves for removal of the suspired air. The patient is furnished with a similar mask, in which he receives the anesthetizing gases. Such a mask has application in war surgery where one must operate in the presence of noxious gases.

Periosteal Lipomas

The case of a man 60 years old who was kicked by a horse a short distance above the right knee is reported by Moulonguet, Bachy and Dobkevitch (*Rev. de chir.* 58:1 [Jan.] 1939). Fifteen days later there was an accumulation of serohemorrhagic fluid in the knee. This was punctured. The knee remained very swollen. Roentgenographic examination led to the diagnosis of osteosis or osteosarcoma. The lipoma implanted on the femur was removed. It showed adult bone with fatty medulla and thick obicula, covered with hematopoietic yellow osseous tissue.

These periosseous lipomas are uncommon. They are accompanied by great periosteal activity. They may originate in lipoma, secondarily adheres to irritation, at the lev

ADDRESS BY DR. MAX THOREK

THE shibboleth of our society is *internationality* and *interfraternity*. From all nations our group is selected. We stand as crusaders for all mankind and for all men. For ages, suffering humanity has appealed for relief. The first plea goes to God and to His ministers on earth, and the second rises to His mortal dispensers of mercy, members of the medical and surgical professions. After all, it is *mercy*, that makes kin the *visible* and the *invisible* worlds. Mercy is the Infinite's great common denominator of the universe. The great mortal common denominator is that most marvelous of all machines, the human body. The mechanicians who keep it functioning and in repair are we, ourselves, the sons of Aesculapius. Ours is the human key to that most precious, living possession as cited in the words of the Apostle Paul: "Skin for skin: All that a man hath will he give for his life."

MAX THOREK, M.D., F.I.C.S., F.I.C.A., Acting International Secretary of the International College of Surgeons.

Now, because of this power vested so sacredly in our venerated profession, scientists must work as one, without barrier, as aptly exemplified in the aphorism of Pasteur we have adopted: *La science n'a pas de patrie parce que le savoir est le patrimoine de l'humanité, le flambeau qui éclaire le monde.* The words and thought of the great Pasteur have been significantly augmented by our excellent International President, Dr. Crotti. There, in substance, is outlined our *credo.*

We must share experiences, discoveries and all research for the sake of science and mankind. For science should be shared mutually and freely with her acolytes as the Infinite Power possesses in common with the finite world the air, the sun and the other elemental attributes of the Universe. If we fail in this mutuality, then we fail as scientists.

Suffering is the common lot. Equally common should be the palliations or panacea, as one by one science unfolds the ways and means to palliation or cure.

Man is not made to live alone, nor races created to dwell in proud, narrow and selfish splendor. Barriers hindering surgical progress must be removed from all scientific endeavors before the world can fulfil its destined place in the universe. Achievement is *of the world, in its entirety*. And so achievement can recognize no limits. It requires organizations such as our International College of Surgeons to blaze the trail for the humanities, working together for the common good; and the good of all humanity means the exchanging of ideas and methods, and ways and means from such groups as ours—and establishes, too, a nucleus from which will sprout and flourish the acme of mortal benefits.

Every surgeon worthy of the name counts as his greatest recompense not his monetary reward —though even a surgeon must live—but the knowledge that he has alleviated suffering, rebuilt an injured body, and kindled anew in the heart of another human being the fires of hope and courage, and often happiness.

All nature is cooperative and correlative. In the destiny of the whole, even the most destructive of nature's forces play a great part; and science is, at once, nature's handmaid and *her master!* As scientists, we are bound together as one body. We must recognize that fact. We are one in science as the body is one in the flesh. Do we ply our art and science on Himalayan mountain tops? On the shores of the Yangtse-Kiang? At the foot of Fuji-Yama? In the shadow of the Seven Hills and the echo of the bells of Rome? Or where the chimes of Big Ben cut through the fogs of London? In the glow of the midnight suns of Norway, Sweden, Greenland, Alaska or the chill Arctic and Antarctic regions? Or the cinders of the smoking shambles, plains and mountains that were once haughty Spain? In the slums of Paris? Or on Unter den Linden of Berlin? By the griefs of

Book Reviews

Surgical Anatomy. By C. Latimer Callander, A.B., M.D., F.A.C.S., Associate Professor of Surgery and Topographic Anatomy, University of California Medical School; Member Founder's Group of American Board of Surgery; Associate Visiting Surgeon to the San Francisco Hospital. With a foreword by Dean Lewis, M.D., Sc.D., F.A.C.S. Second edition, entirely reset. Price, $10. Pp. 858, with 819 illustrations. Philadelphia, W. B. Saunders & Company, 1939.

THE second edition of this splendid work is outstanding for its lucid style, its thoroughness and its admirable illustrations. The first edition appeared in 1933. The well deserved success which this work met with in its first edition is assured in its present form. It is classic in arrangement and refreshingly informative. Numerous new illustrations have been added to embellish and further augment the revised text. The student, general surgeon and specialist will find this work of great aid. The author, being a practicing surgeon, has garnered *only that material which, in his opinion, is* authoritative and which will prove of value in performing surgical operations The work has been reset, much obsolete material has been deleted, and recent devlopments in surgical and topographic anatomy have been added. The *printing, binding and illustrations are of the* highest type. The work is highly recommended as a valuable addition to any medical library and has already established itself as of great value in teaching.

E. T.

Spinal Anesthesia. By Louis H. Maxson With a foreword by W. Wayne Babcock. Price, $6.50. Pp. 409, with 70 illustrations Philadelphia, J. B. Lippincott Company, 1938.

THIS work is a complete presentation of the principles and practice of spinal anesthesia The text opens with a historical survey of the subject matter, followed by a thorough discussion of the anatomy of the parts concerned in subarachnoid block, to be succeeded by a discussion of the physical aspects and the various technics used by different authorities The author points out that the conception of rapid mass movement of the spinal fluid is erroneous and that analgesia is produced by dispersion, convection and diffusion. Due credit is given to the rôle played by gravity and to the fact that the factors mentioned alone are responsible for shifting of the anesthesia from the point of injection to other points of the spinal canal. The various technics are thoroughly described and their merits and demerits discussed. The illustrations are diagrammatic. The work is divided into thirteen chapters. It has an excellent bibliography and a thorough author's index. While discussing tropacocaine, the author states that this drug has been discarded in favor of novocaine. It is nevertheless still used in many quarters, and it would perhaps be well to point out that in 20 per cent of cases tropacocaine anesthesia is followed by untoward bladder manifestations. This *work deserves the careful study of every anes*thetist, every general surgeon and every specialist, and it is predicted that it will be well received by the profession.

XAM.

Pediatric Surgery. By Edward C. Brenner, A.B., M.D., F.A.C.S. Price, $10. Pp. 843, with 293 illustrations. Philadelphia, Lea & Febiger, 1938.

PEDIATRIC surgery is becoming a rather important branch of general surgery. The author attempts in the present contribution to "present a volume neither encyclopedic nor compendial in type which may be of practical value to those engaged in the study of pediatric surgery." In this he has well succeeded. The work is divided into nine parts, each of which is subdivided into various subject matter. Fractures, dislocations and other orthopedic conditions are not included in the work. Diagnostic indications for operation, surgical therapy and the end-results in given operative procedures are well described. Special emphasis is given to conditions peculiar to infancy. The surgical methods described in the various surgical entities are well chosen. Many of these are augmented by pre- and postoperative treatment. A special chapter on anesthesia, by Dr. T. Drysdale Buchanan, is well presented, as is the chapter on blood transfusion by Dr Lester J [illegible]

Dr. Edward Frankel, Jr., Executive Secretary, named the members of the committee of the International Assembly and paid tribute to the fine activities of the Ladies' Auxiliary and the future of the College.

DR. EDWARD FRANKEL, JR., New York: If you had sat on the platform at the Convocation last evening and looked over the distinguished assemblage of men comprising our class of about 100 candidates, it would have been a source of satisfaction to you to see such earnestness, absorbing interest and informal dignity. It was a wonderful and inspiring ceremony. The International College of Surgeons is still, indeed, in its infancy, but it is growing, and growing rapidly; and it is here to stay.

Toastmaster Dr. William Seaman Bainbridge introduced Colonel Harold Dunbar Corbusier, of Plainfield, N. J., Vice President of the International Congress of Military Medicine and Pharmacy, to succeed Major General C. R. Reynolds. He then presented Dr. Emin Erkul, of Istanbul, Turkey.

DR. EMIN ERKUL, Istanbul, Turkey: After having participated in the Tenth International Congress of Military Medicine and Pharmacy, I have been honored in being able to take part in the International Assembly of the International College of Surgeons. I should like to add my earnest desire for the increased activity of the College. In expressing again my thanks, I wish happiness for America and the Americans!

HONORS

Toastmaster Dr. William Seaman Bainbridge then presented, in the name of the Surgeon General of Poland, Dr. Stanislaus Rouppert, the honorary degree of graduate of the University of Poland and Honorary Professorship in the Sanitary School of Poland to the following: Dr. Ross T. McIntire, Rear Admiral, Medical Corps, United States Navy, and Dr. André Crotti, International President of the International College of Surgeons. Dr. Francisco Castillo Nájera, Ambassador from Mexico, had already been presented with this distinction, and Major General C. R. Reynolds had received it some years ago.

EXECUTIVE SESSION OF UNITED STATES CHAPTER

In Conjunction With

EXECUTIVE SESSION OF INTERNATIONAL COUNCIL

Wednesday, May 24, 5:00 p. m.

FREDERICK M. DOUGLASS, M.D., *President, United States Chapter, Presiding*

Discussion of the guilds and their activities ensued. Participants were Dr. Charles H. Arnold, of Lincoln, Neb., Dr. Joseph William White, of Scranton, Pa., and others.

ANDRÉ CROTTI, *International President, in the Chair*

VOTED: Whereas, The International Assembly held in Philadelphia, Oct. 14, 1938, ratified and adopted a revised Constitution and By-Laws, and

Whereas, The study of this Constitution and By-Laws has revealed the desirability of having it registered in Geneva as a part of the registered Constitution and By-Laws,

Be It Resolved, That the International Assembly convened in the City of New York on May 24, 1939, hereby empower the International Executive Council to have the adopted Constitution and By-Laws represented as representing an amendment in extension and continuation of the registered Constitution and By-Laws, and

Be It Further Resolved, That the International Executive Council be hereby empowered to appoint a business agent in the City of Geneva, Switzerland, said business agent to be or not to be a member of the medical profession, at the discretion of the Council, for the purpose of representing the Council according to the provision of law.

VOTED: That the Assembly in session at present empower the International Executive Council to decide, at its own discretion, the place of the international meeting two years hence, also giving each member an opportunity and a right to suggest any place of meeting two years hence.

VOTED: That the present Assembly go on record as thanking and congratulating the committees which have had charge and all who have taken part.

FREDERICK M. DOUGLASS, *President, United States Chapter, Presiding*

VOTED: That reading of the minutes of the meeting in Philadelphia be dispensed with on account of the lateness of the hour.

VOTED: That Dr. Benjamin I. Golden, of Elkins, W. Va., be elected Treasurer of the United States Chapter to fill the unexpired term left vacant due to the resignation of Dr. Oscar B. Nugent, of Chicago.

VOTED: That the next meeting be held in Venice, Fla., on Feb. 12 and 13, 1940, and that it be known as the National Assembly of the United States Chapter of the International College of Surgeons

Hospital Organization and Management. By Malcolm T. MacEachern, M.D. Price, $7.50. Pp. 944, with illustrations. Chicago: Physicians Record Co., Publishers, 1935.

OCCASIONALLY, besides the "mine run" of ordinary books that come to the reviewer's desk, there is one of special and outstanding interest. Such is Dr. MacEachern's book on hospital organization and management.

To those of us who can look back thirty or forty years or more, there is no special achievement so wonderful as the development in this field, which has called into its service every advance in civilization and science, and includes not only the strictly professional aspects of the treatment of disease but also the social and economic aspects. Even more, the hospital of today not only has come to be regarded as a place where disease is treated and cured, but is rapidly becoming associated as the proper center of community health and as a focus from which the people may obtain correct information regarding the prevention of disease.

The multiplicity of services and of fields of endeavor in a modern, efficiently equipped and staffed hospital are so great that hospital organization and management has become a serious problem. The administrator of an important hospital is a general commanding an army; experience, knowledge, tact, courtesy, ability and judgment are required of him.

It is fortunate for those who have to do with the administration of hospitals that Dr. MacEachern has committed his experience in this regard to writing, as there is perhaps today no one better qualified or no more capable living exponent of the subject. As Director of Hospital Activities of the American College of Surgeons, Dr. MacEachern has for twenty-two years been most intimately associated with the management of every angle of hospital management both here and abroad. He is, therefore, singularly fitted for the task which he has undertaken, and his textbook on "Hospital Organization and Management" must be considered in every way as authoritative. The volume covers the history of hospitals, the steps to be taken in promoting, building and organizing new hospitals, as well as all the details of the nursing, dietary, outdoor, social service, recording and all other service departments of a functioning hospital. The organization, coordination and supervision of every angle connected with these and all other components of the modern hospital considered as a unit are fully and practically explained in detail.

The medical, surgical and adjunct professional departments, as well as the business and ethical aspects of the hospital's work, are covered in special chapters.

To say that Dr. MacEachern has done his work excellently would be merely trite. It is hard to imagine how it could have been done better or presented in a more interesting way. It should hold the attention not only of professional workers associated with hospital practice but of those of the laity who are conscious of the intimate part played by the hospital in modern community welfare and who recognize their duty of being cognizant of everything pertaining to the hospital.

There is little doubt but that Dr. MacEachern's book will become the standard one on hospital management and organization which should be in the hands of every one who aspires to have a good working knowledge of this difficult subject. It is well arranged; the printing and format are excellent, and there is a good index. Particular attention is called to the fine illustrations, which, besides being unusual, give a particular significance to a book of this kind.

KEROHT.

Chirurgia. By Prof. Davide Giordano. Two volumes. Price, 60 lire. Pp. 510 and 420. Firenze: Bompiana, 1938.

PROF DAVIDE GIORDANO, the eminent Italian surgeon, historian and writer, was invited by the National Syndicate of Authors to write a monograph on Italian surgery of the twentieth century, this to form part of the large encyclopedia of Italian monographs. Two volumes on this subject have appeared, comprising a review of the progress made in the science and technic of Italian surgery of the first quarter of the century. The introductory chapter presents the fundamental accomplishments of Italian surgery in the past century and the conditions favoring or opposed to its development. In the following chapters are discussed general subjects such as physical therapy, infections, blood transfusions, analgesia and anesthesia, grafts, war surgery and tumors. Several special pages are devoted to regional surgery, and there are chapters on specialties. In the last chapter, dedicated to "the future of surgery in Italy in the twentieth century," are stated the provisions for future development.

The task of harmonizing in a running treatise a mass of studies and research so vast, with 2,000 bibliographic references, is pleasingly achieved. In spite of the comprehensiveness of the survey the author states that the work does not pretend to present the complete picture of Italian surgical history. Those conversant with the Italian language will find much valuable information in this contribution to contemporary medical literature.

THOREK.

Medical Society of New Jersey

The **Medical Society of New Jersey** held its one hundred and seventy-third Annual Meeting in Atlantic City, June 6-8. Among the speakers were DR. I. S. RAVDIN, of the University of Pennsylvania, and DR. ALFRED STRAUSS, of Michael Reese Hospital, Chicago. DR. GEORGE P. MULLER, of Jefferson Medical College, Philadelphia, addressed the **Section on Surgery** on "Acute Appendicitis."

The following program was given at the meeting of the **Section on Gastroenterology**:

The Constitutionally Inadequate Patient. DR. WALTER C. ALVAREZ, the Mayo Clinic.

Experiences in Diagnosis with the Peritoneoscope: Indications for Its Use. DR. C. ABBOTT BELING, Newark, N. J.

The Treatment of Intestinal Obstruction with the Double-Barreled Intestinal Tube. DR. W. OSLER ABBOTT, the University of Pennsylvania.

Functional Diseases of the Colon. DR. SIGURD JOHNSEN, Passaic, N. J.

Vascular Diseases of the Digestive Tract. DR. STUART Z. HAWKES, Newark, N. J.

The following officers were elected for the **Section on Gastroenterology**: DR. HYMAN I. GOLDSTEIN, of Camden, N. J., Chairman, and DR. CARROLL D. SMITH, of Paterson, Secretary. DR. MANFRED KRAEMER, of Newark, is the retiring Chairman and DR. GOLDSTEIN the retiring Secretary.

The Medical Society of New Jersey, founded in 1766, is the oldest medical society in this country.

The Fourth Congress of the International Society of Orthopedic Surgery and Traumatology will be held in Berlin, Sept. 4 to 8, 1939, under the presidency of **Prof. Georg Hohmann**, of Frankfurt-am-Main. Following the opening of the Congress by **Prof. Hohmann, Prof. Louis Ombrédanne**, of Paris, will give an address, and the General Secretary, **Dr. Delchef**, of Brussels, will present a report.

——o——

The **Third International Congress on Cancer**, which will meet in Atlantic City, N. J., September 11 to 16, is to be held under the auspices of the **International Union Against Cancer.**

The **Third French Congress on Gynecology** met at Lille, May 27 to 30. The chief topic for discussion was "Parthenology," with **Dr. M. F. Jayle,** of Paris, leading. The congress was held at the same time as the Exposition of Social Progress and was enlivened by a number of fêtes, receptions, and excursions to nearby points of interest.

——o——

The twenty-fourth annual meeting of the **American Association of Industrial Physicians and Surgeons,** in conjunction with the **American Conference on Occupational Diseases and Industrial Hygiene,** was held at the Hotel Statler, Cleveland, June 5 to 8, inclusive.

THE NATIONAL ASSEMBLY OF THE UNITED STATES CHAPTER OF THE INTERNATIONAL COLLEGE OF SURGEONS WILL BE HELD FEBRUARY 12 AND 13, 1940, AT VENICE, FLORIDA, UNDER THE DIRECTION OF INTERNATIONAL PRESIDENT-ELECT DR. FRED H. ALBEE AND THE PRESIDENCY OF DR. FREDERICK M. DOUGLASS.

❦

Anatomie et histologie de l'appareil urinaire et de l'appareil génital de l'homme. By A. Hovelacque and Jean Turchini. Price, 260 francs. Pp. 310, with 180 illustrations. Paris: Gaston Doin & Cie, 1938.

THIS work is divided into two parts. The first, contributed by Professor Hovelacque, is on the macroscopic anatomy and the development of the genito-urinary apparatus. To this is added a description of the anatomy of the perineum. This part of the work is very thorough and excellently rendered. It will prove of value to both medical men and surgeons. The volume is augmented by radiographic studies of the genito-urinary tract. The illustrations are very satisfactory. The second part of the book is by Professor Turchini, who has contributed the section on the histology of the genito-urinary apparatus of the male. The histology and histophysiology are described in the light of the most modern researches. The function of the interstitial cells, the so-called cells of Leydig, is thoroughly discussed. Correlated subjects are not omitted. The photomicrography is excellent. This is an authoritative work of value and should be in the library of every surgeon, endocrinologist and progressive medical man. The bibliography, while not exhaustive, is sufficiently clear as a guide.

O.

SPECIAL RATE FOR JOURNAL

The Publication Committee has authorized the INTERNATIONAL CONVENTION YEAR subscription rate for the JOURNAL to be reduced (for this year) to $3.00.

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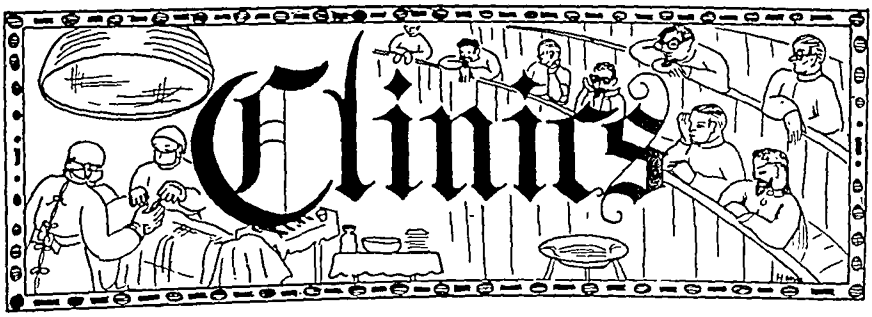
The assets of **American Foundations** now amount to more than $1,200,000,000, according to a report recently published by the Raymond Rich Associates of New York. Of 243 foundations listed, 121 reported capital assets of $945,443,637 at the end of 1937, the latest year for which figures were available. For the other 122 that did not make public the extent of their assets, available information indicates that they aggregate about $250,000,000. Among the largest were: Rockefeller Foundation, $184,435,516; Carnegie Corporation of New York, $163,841,376; General Education Board, $54,607,431; Commonwealth Fund, $51,830,504; Kresge Foundation, $50,358,564; W. K. Kellogg Foundation, $46,609,613; Carnegie Institution of Washington, $36,506,669, and the Carnegie Foundation for the Advancement of Teaching, $29,031,848. Certain foundations reported decreasing assets, most of them being those that have been appropriating from capital for project grants as a matter of policy. —*J. A. M. A.*

Mrs. Marguerite Kettle, M.R.C.S., assistant editor of the *Lancet,* died in London on May 4. She was born in a suburb of London in 1887, was educated in England and France, and went to South Africa in 1910, where she passed the matriculation examination of London University by a correspondence course. She returned to England in 1913 and entered the London School of Medicine for Women, then transferred to St. Mary's Hospital, London. In 1918 she married Prof. E. H. Kettle, F.R.S. Later she joined the staff of the *Lancet,* for which she wrote a series of articles on "Modern Technique in Treatment," later published in four volumes. She wrote the report of the *Lancet* commission of nursing, and was appointed a representative on the General Nursing Council. A professional medical writer of realistic approach and idealistic views, **Mrs. Kettle** has set a high standard in medical literature.



WEST VIRGINIA GUILD MEETING

The West Virginia Guild of the International College of Surgeons held its first meeting in Charleston, W. Va., on June 15.

The program for the day was arranged by Dr. John E. Cannaday, State Regent, and Dr. G. E. Irwin, Chairman of the State Guild.

At 9:00 a. m. an operative clinic was held by Dr. Cannaday and staff. The operative cases were well selected and timely. Luncheon was served at the Charleston General Hospital for the members and their guests. In the afternoon a dry clinic was held by the staff of the Charleston General Hospital, and the discussion was participated in by all present. The day was a very valuable one, not only from the educational angle but also for the enthusiasm of the men present in this type of clinic.

It was unanimously approved that a State Guild meeting be held in Charleston in October, at which time a number of the younger surgeons throughout the state be invited and be given parts in the program.

—Thomas L. Harris, M.D., F.I.C.S.,
Secretary of the West Virginia Guild of the International College of Surgeons.

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Pancreatic Secretion of Gastrectomized Persons

In the patient subjected to gastrectomy the regain in weight is tedious and uncertain. It is rapid after gastrostomy. This difference, according to Santy, Mallet-Guy, Chambon and Folliet (*Lyon chir.* 36:11 [Jan. & Feb.] 1939), is due not to a diminution of the pancreatic secretion but rather to the method of emptying the secretion. A study of 128 cases of gastrectomy showed, among other anomalies, great variability in the activity of the pancreatic juices. The physiologic mutilation which represents removal of the stomach does not seem to be the direct and exclusive factor in emaciation. One must consider diverse causes: the greater or less rapidity of passage of food in the small intestine, anachlorhydria, disturbance of circulation. It seems that the power to secrete secretin is preserved but that the pancreatic parenchyma responds irregularly to hormonal excitations. An unknown factor disturbs this stimulus. This factor may be due to the partial resection of the pneumogastric nerves.

Enervation of the Carotid Sinus

The carotid sinus intervenes normally in the cardiac rhythm and the arterial pressure. Owing to peculiar nervous receptive elements, it possesses also a reflexogenic sensibility and an endocrine function as yet ill defined. Numerous technics have been proposed for the enervation of the carotid sinus. Léger (*J. de chir.* 53:176 [Feb.] 1939) attacks the sinus at the bifurcation of the carotid artery. He describes his technic in detail. The illustrations are clear. This enervation entails no serious physiologic disturbance, because of the compensation furnished by the cardio-aortic sinus. The only contraindications are: youth, old age and arterial hypertension. In eighty cases of epilepsy, fifteen cures and twenty-one improvements were noted. In the syndrome of hyperreflexia of the carotid sinus one notes success in 85 per cent of the cases.

Ablation of the Aorticorenal Ganglion

Section of the nerves of the kidneys being innocuous, total enervation of these organs in cases in which there are diverse painful symptoms is proposed by Fontaine and Bilger (*J. de chir.* 53:582 [March] 1939). The aorticorenal ganglion constitutes the most important source of these nerves. It seems more simple to do an exeresis of this ganglion than to dissect the entire group of renal nerves, which are grouped close to the distal third of the course of the renal artery and surround this vessel. Fontaine and Bilger used this intervention in thirteen cases, once bilaterally. Ten were cases of painful hydrinephrosis, and three were cases of hypersensitive nephritis. The operative technic is described in detail. They noted no immediate after-effects and no late complications. In general, the patients urinated on the day of the operation, and diuresis rapidly returned to normal. The operation is equally efficacious in slight hydronephrosis not amenable to ordinary therapeutic measures.

Death of Antoine Béclère

The Academy of Surgery deplores the recent death of Antoine Béclère, who was one of the first to foresee the future of the x rays not only as a diagnostic aid but also as a therapeutic measure in the treatment of tumors. For thirty years he taught radiologic technic at St. Antoine. He perfected and invented many technics. Fourteen nations celebrated the anniversary of his eightieth birthday. He well deserved the title which he bore—"the father of French radiology."

Prof. Albert Fraenkel, of Heidelberg, died in December 1938, aged 74. He was noted as a clinician, introduced the intravenous use of strophanthin, and was an expert on pulmonary tuberculosis.

Dr. Henry K. Pancoast, x-ray specialist, of the University of Pennsylvania, died May 20.

* * *

Dr. George M. Boyd, obstetrician, of Philadelphia, died May 20.

Vol. II October 1939 No. 5

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WILLIAM H. WELCH
OCT 9 1942
MEDICAL

The Journal of the International College of Surgeons

(Founded in Geneva, 1935)

PUBLISHED BIMONTHLY UNDER THE AUSPICES OF THE UNITED STATES CHAPTER

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special chapters are "Congenital Cleft Lip and Palate," by Dr. H. S. Vaughan, and "Thoracic Surgery," by Dr. L. R. Davidson. Urologic conditions are discussed by Drs. C. G. Bandler and A. H. Milbert Neurologic surgery is described in a special section by Dr. C. A. Scarff. As a whole, the work is well arranged, and the illustrations are well executed. The work is warmly recommended as an adjunct to the general surgeon's library. There is a total absence of bibliographic references, which would undoubtedly enhance the value of the work. There is an excellent index of general subject matter.

O. R.

Anus, Rectum, Sigmoid Colon: Diagnosis and Treatment. By Harry E. Bacon, M.D. With an introduction by W. Wayne Babcock and a foreword by J. P. Lockhart-Mummery. Price, $8.50. Pp. 855, with 487 illustrations. Philadelphia, J. B. Lippincott Company, 1938.

PROCTOLOGY, as a specialty, has made marked strides in the last two decades. The author states that his object in writing this text has been to place within the reach of all divisions of the medical profession a comprehensive and readily intelligible exposition of "our present knowlelge of the various affections of the anus, rectum and sigmoid colon." It is obvious that a great deal of sincere effort has been put into this opus. As an example, figure 26, on page 27, immediately attracts the eye, being a very instructive diagrammatic study of the venous drainage of the rectum and anus via the superior, internal, inferior or external hemorrhoidal plexus in their relation to the portal system. Equally intriguing are the fine illustrations depicting the lymphatics of the rectum. Thus from the outset the anatomy and physiology are thoroughly described and depicted. One is promptly impressed with the thorough bibliography after each chapter, prima facie evidence that the work has not been written by proxy.

The arrangement of the chapters is excellent. History, examination, biopsy and the various clinical tests are thoroughly entered into. Anesthesia and analgesia as related to proctology are lucidly described, and this is followed by a thorough discussion of the inflammatory conditions of the parts concerned. Here, however, nothing is said about the pectinate line or pectenosis. The chapters on fissure in ano, pruritus ani and anorectal abscesses are expertly treated. The chapter on fistula is well written. Such conditions as proctitis and sigmoiditis, venereal disease of the anus and rectum and lymphopathia venereum, as well as strictures and stenosis and rectal prolapse, are treated with the same thoroughness and excellent presentation as are all the chapters comprising this fine work. The division on hemorrhoids, benign tumors and malignant growths of the lower intestine receive full consideration. The author's efforts to create a one volume encyclopedic work on proctology has been crowned with success While no single volume can embrace all operative methods, Bacon has garnered from the literature of the world the outstanding contributions to his specialty. It is hoped that in the next edition Devine's latest work on intestinal obstruction will receive proper mention.

All in all, this reviewer highly delights in joining Lockhart-Mummery in the statement that this work should prove of value to all proctologists as a work of reference. He also subscribes to W. W. Babcock's statement that this work represents a most practical book containing a wealth of information from which the specialist may refresh his memory, while the practitioner will find that it will clarify his difficulties. To the best knowledge of this reviewer, there is no more complete single volume on proctology than the present work of Dr. Bacon.

THOREK.

Applied Anatomy: Functional and Topographical. By Robert H. Miller, M.D. Price, $6.50. Pp. 484, with 71 illustrations. Philadelphia, Lea & Febiger, 1938.

THE author of this volume attempted to correlate the knowledge gained by observation in the laboratory and apply it to the "dynamics and functions of the living body." An effort has been made to "clothe the skeleton with living parts, put it in the erect posture and to set it in motion." Topographic landmarks are pointed out, and the student is aided in developing a roentgen eye. The work is a thorough compilation of subject matter succinctly stated and authoritatively presented. It will be of much aid not only to the student but to all those whose activities demand a knowledge of anatomy. The volume is printed on fine stock and well illustrated. The B. N. A. nomenclature is used. The general practitioner and the student will find this work a welcome addition to their library.

X. A. M.

The Journal of the International College of Surgeons

PUBLISHED BIMONTHLY BY
THE UNITED STATES CHAPTER OF THE INTERNATIONAL COLLEGE OF SURGEONS

OCTOBER, 1939

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Tactique opératoire des glandes endocrines. By G. Jeanneney and P. Foucault. Price, 65 francs. Pp. 190, with 126 illustrations. Paris: Gaston Doin & Cie, 1938.

IN the last years, surgery of the endocrine system has experienced a great upswing due to the excellent researches of Felix Mandl, Oppel, Leriche and others. This excellent work is limited to surgical intervention on the endocrine system. The special technics required in operating on these organs are fully described by the authors, who not only discuss technic but also give in detail indications for operative interventions. The arrangement of the work is commendable. Preceding each chapter there is a review of the anatomy of the endocrine gland under discussion, followed by a survey of the clinical manifestations of particular pathologic entities. Succinct operative steps are outlined. Surgery of the thyroid, parathyroid, hypophysis and other endocrine glands is thoroughly described and depicted. Surgery of the adrenal glands and the surgical attempts to remedy hypertension as outlined by Mandl and others are included in the work. The technic of transplantation of testicular and ovarian gland tissue is also included. The endocrine function of the breast, the pancreas, spleen and thymus, as well as all other endocrine glands, are embraced in the discussion. Modern surgeons interested in advancement will find this work informative. There are a comprehensive bibliography and a subject index.

H.

The Medical Staff in the Hospital. By Thomas Ritchie Ponton, B.A., M.D. Price, $2.50. Pp. 288, with 6 charts. Chicago, Physicians Record Company, 1939.

PONTON is no stranger to the interesting problems of hospital administration and to the literature pertaining to hospitals and correlated activities. He is also the author of "Alphabetical Nomenclature of Diseases and Operations." He set out in this volume to write an authoritative work on the medical staff in the hospital, and he has admirably succeeded in his task. The work is divided into nine chapters. The first deals with the governing body, the second with the physicians and the hospital, the third with the selection and appointment of the medical staff, the fourth with organization of the medical staff, the fifth with by-laws of the medical staff, the sixth with meetings of the medical staff, the seventh with the medical staff and medical records, the eighth with professional accounts and the ninth with the resident medical staff. Thus every phase of the subject under discussion is embraced. Each chapter is subdivided into numerous subheadings and arranged in a readable and instructive manner. The work includes addenda and a thorough bibliography. It is timely and should be in the possession of every hospital administrator, executive and staff member. It will prove invaluable as a guide and reference book.

M. T.

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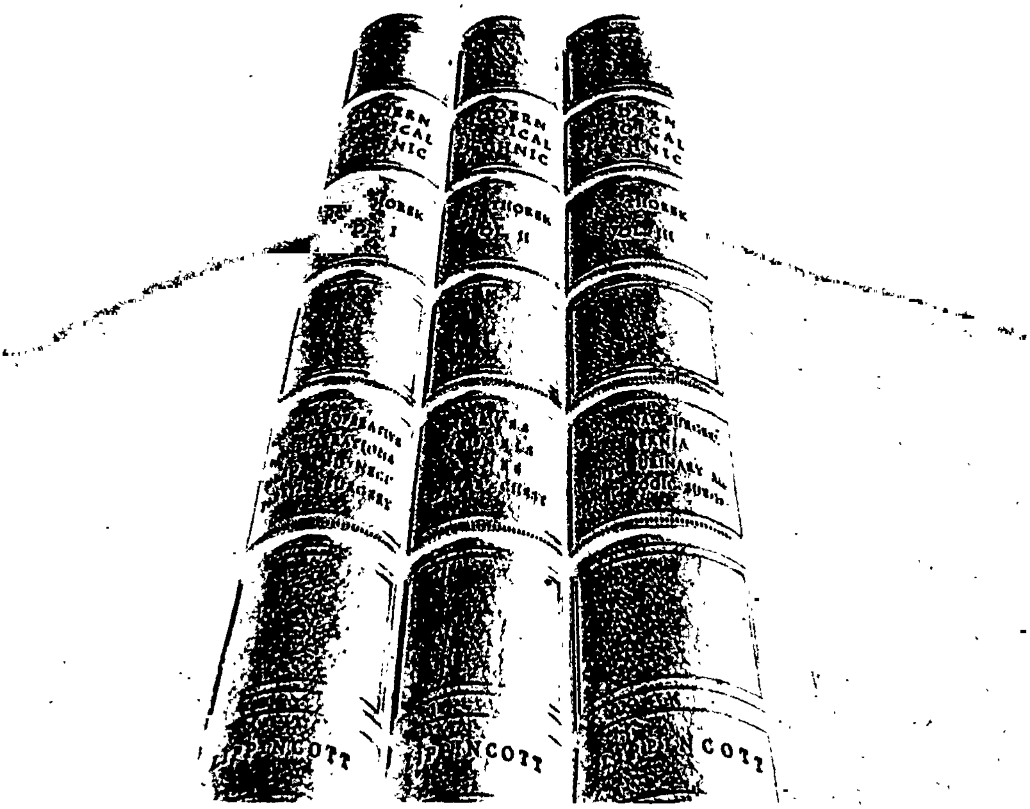

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Editorials

DRAINAGE IN ACUTE APPENDICITIS

> "Disguise it as you will,
> To right or wrong 'tis fashion guides us still."

NO MORE than a meager knowledge of the history of our art is necessary to convince us that this precept is true of many forms of medical treatment as practiced from the dawn of time down the ages to the present day. The vast majority of doctors are content to follow blindly the fashion of the moment in the treatment of disease, without pausing to reflect whether it is guiding them rightly or wrongly. When this fashion is based on sound fundamental premises, it guides them rightly, and they are justified in adopting it by the results which they obtain; when, on the other hand, it springs, like fashions in dress, merely from a desire to try something new, it usually guides them wrongly, and much harm may be done before it is abandoned and the form of treatment displaced by it comes back once more into grace.

A fashion of the present day is to restrict the use of the drainage tube in the treatment of acute appendicitis. Many papers have been published, in recent years, in which it has been suggested that the use of this tube brings in its train dangers almost greater than those associated with the disease itself, and that, in many cases, its sole value is its hypnotic influence on the surgeon. It has been stated that the presence of a drainage tube increases the incidence of such complications as residual abscess, fecal fistula and intestinal obstruction and that it is not necessary to employ drainage even in cases in which the appendix is gangrenous or has perforated. Though it is true that the authors of these papers have been careful to mention various indications for drainage in this disease, the general effect of their work has been to give rise to a widespread belief that it is tantamount to a confession of surgical incompetence to drain the abdomen after the removal of an acutely inflamed appendix.

A recent review of one thousand cases of acute appendicitis treated at the Royal Melbourne Hospital showed that, though the dictum, "when in doubt, drain" was generally adopted, a tube having been used in 38.4 per cent of the total number of cases, this policy was temporarily abandoned after the publication of one of the papers opposing this practice. The results were immediate and catastrophic in that there ensued residual abscess in two cases, peritonitis with ileus in one and pylephlebitis in one. Three of these four patients died and, though it is possible that the results would not have been improved by the use of a drainage tube, there is no doubt that the surgeons responsible would have been happier had they enjoyed the "hypnotic influence" of its presence. This review also showed that the incidence, after drainage, of fecal fistula was 1.3 per cent, that of residual abscess 1.5 per cent and that of intestinal obstruction 0.5 per cent. In two u
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could do better than the A. M. A., it seems the part of wisdom to be grateful for what Fishbein and the A. M. A. actually have accomplished in the many problems confronting the future of medicine. It is hardly conceivable that any governmental agency could have done more. A multiplicity of evils is not eliminated by a miraculous fiat. Steady, ever expanding effort is necessary. The cooperative loyalty of the profession is of paramount importance. For our part we wish that men like Fishbein could be parthenogenetically multiplied; the profession could use a few thousand of them to good advantage.

VINCENT A. LAPENTA.

◆

INQUIRIES ABOUT PAPERS, ETC., SHOULD BE ADDRESSED TO DR CHARLES H. ARNOLD, SECRETARY OF THE SCIENTIFIC ASSEMBLY, 908 TERMINAL BUILDING, LINCOLN, NEBRASKA.

◆

THE NATIONAL ASSEMBLY OF THE UNITED STATES CHAPTER OF THE INTERNATIONAL COLLEGE OF SURGEONS WILL BE HELD FEBRUARY 11 TO 14, 1940, AT VENICE FLORIDA, UNDER THE DIRECTION OF INTERNATIONAL *PRESIDENT-ELECT DR. FRED H. ALBEE AND THE PRESIDENCY* OF DR. FREDERICK M. DOUGLASS.

◆

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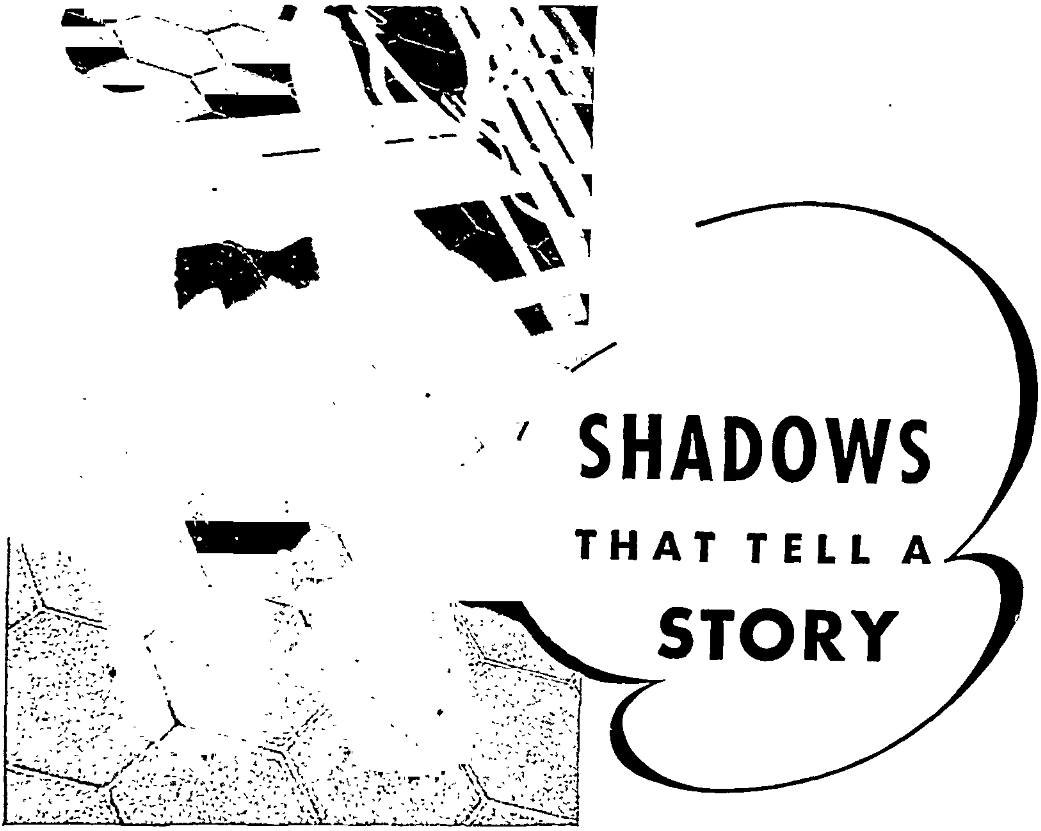

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SURGERY OF CAROTID BODY TUMORS*

R. W. McNEALY, M.D., F.A.C.S., F.I.C.S.

AND

R. F. HEDIN, M.D.

CHICAGO

CAROTID body tumors, long considered rare, have been reported in the literature with increasing frequency during the past few years. Many cases of these tumors undoubtedly have not been recorded but Sonck[1] in 1937 was able to collect 236 cases of carotid body tumors.

The first anatomic description of the carotid body was by Von Haller in 1743. He termed it the "ganglion minutum." Subsequently, Newbauer in 1786, Andersch in 1797 and Luschka in 1862 made contributions to our knowledge of this gland.

ANATOMY

The normal carotid body is approximately the size of a millet of wheat and is located at, or near, the bifurcation of the common carotid artery. Its exact location with reference to the crotch of the carotid is extremely variable. It may be absent on either or both sides. The gland generally increases in size up to the age of 30 years after which it remains stationary[2] and the glandular structure is replaced by connective tissue elements. A fibrous band called the ligament of Mayer holds the carotid body to its saddle-shaped bed and through this attachment it receives its blood supply. There is a definite fibrous capsule surrounding the gland which is continuous with its ligamentous attachment. Microscopically the carotid body is divided into lobules by fibrous septa. This fibrous network is composed of medullated and nonmedullated nerve fibers which encircle groups of large polyhedral cells. These cells which comprise the lobules vary in size and have no regular arrangement. Cells which have affinity for the salts of chromium have been found scattered throughout the gland. The gland is exceedingly vascular and large sinusoids are present within it.

EMBRYOLOGY

The many varieties of cellular elements found in the carotid body have caused dispute as to its origin. As one or the other of its elements has been emphasized by different investigators, so have been formulated the various theories concerning its origin. Three principal genetic elements are suggested: epithelial, vascular and nervous. The opinion that the pharyngeal epithelium might serve as a precursor is usually discredited. The latter two theories are supported by the fact that the development of the carotid body is intimately bound with the differentiation of the third aortic arch of the embryo which is the anlage of the internal carotid artery.[3] The carotid artery is supplied by a very characteristic branch of the glossopharyngeal nerve which is embryologically and comparatively the nerve of the third arch. Branches of the vagus and hypoglossal nerves and the cervical sympathetic ganglia also are present in the carotid body which are thought by many to be brought to this region by growth changes during the development of the third aortic arch. The presence of nerve cells which are

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*Read at the International Scientific Session of the International College of Surgeons, New York, May 23, 1939

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in the growth process, but distant metastases are rare. Following excision, local recurrences have been reported. Bilateral tumors are exceedingly rare.[13]

The distribution of carotid tumors is approximately equal between males and females. The youngest case reported was seven years of age and the oldest 73. Most cases which are reported occur in the third or fourth decades of life. These tumors have been found in both white and colored races. Familial tendencies have been recorded only once in the literature. Chase[7] reported operating on two sisters, each having a carotid body tumor.

DISCUSSION OF PATHOLOGY

In this series of four carotid body tumors the same elements are present, only in widely varying proportions. Some variation of arrangement is probably a factor of the state of hyperplasia. In three of the tumors the common arrangement of the large polyhedral cells is that of small alveolar units, and most of these units are surrounded or bordered by narrow, thin-walled blood vessels or capillaries which broaden out at intervals to form sinusoidal blood spaces. In many places there is no demonstrable support for the widely separated endothelial cells of the capillaries, but in more typical areas a delicate connective tissue stroma can be seen between the endothelium and the alveolar structures. Occasionally this stroma is accentuated, apparently in response to inflammatory changes.

In tumors showing the least degeneration, hyaline masses are not numerous and are widely separated. The Bodian and Davenport silver stains failed to demonstrate more than an occasional nerve fiber in any of the tumors. Weil[14] states that this absence of nerve fibers is real and that in Masson's[12, 15] early observations, without the advantage of silver stains, hyaline strands were interpreted as nerve fibers. Failure of prompt fixation in Zenker's or Orth's fluid probably accounts for our failure to demonstrate definite chromaffin granules in the polyhedral cells. Where granules were observed in one case they were present with vacuolated cytoplasm and appeared to be a part of a parenchymatous degeneration of the cells. All other elements and variations in the proportion of the above mentioned elements can be accounted for by the degree of degeneration found in these tumors. The granular and vacuolated cytoplasm has already been mentioned as a parenchymatous degeneration. Some of the polyhedral cells are greatly swollen in the early stages of degeneration and appear as very large mononuclear or binucleated cells which may be called giant cells. The eventual and common changes in the polyhedral cells resulting from degeneration are shrinkage and condensation of both cytoplasm and nucleus. The nuclei are deeply stained with hematoxylin, irregular and pyknotic, and there may be a combination of the nuclei in a pool of condensed or syncytial cytoplasm to form degenerated giant cells. The nuclei in most cases remain discreet and become progressively smaller and as they fade away the remaining syncytial cytoplasm becomes a part of the hyaline masses. In this connection it is interesting to note that where there is the most degeneration there is the most hyaline material in practically direct proportion. Some writers have ventured to state that hyaline material is most abundant about the blood vessels. It is true that most of the larger blood vessels are surrounded by hyaline material, but it is also true that most of the hyaline material bears no direct relation to the blood vessels. Only endothelial and connective tissue elements remain in the hyaline masses to bear witness of the former structure.

In portions of some of the tumors there is rather extensive hemorrhage

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News Items: The Journal will be pleased to publish personal news and all items of interest. Items dealing with appointments to hospitals and medical schools, activities of meetings, etc., if considered by the editors to be of sufficient interest, will be included in the columns of the Journal. Such items may be sent to the Editorial Office, 850 West Irving Park Boulevard, Chicago, Illinois.

the site of the tumor. Syncope,[21, 22] hoarseness and dysphagia may be caused by pressure of the tumor on adjacent structures.

TREATMENT

The treatment of choice in this type of tumor is surgical removal. However, this should be done only when operation does not endanger the patient's life. The feasibility of removal of carotid body tumors depends on the relation and adherence of the tumor to the carotid vessels,[23] namely, the common, internal and external. The mortality following ligation of the common or internal carotid arteries, combining all age groups, carries a mortality of above 30 per cent.[24] LeFort[25] has placed the percentage of cases in which the brain is affected following ligation of the common carotid at 54.5. Freeman states, however, that cerebral manifestations occur in only 20 to 25 per cent. The discrepancy in statistics is probably to be explained on the basis of variation in age groups. Ligation of the external carotid artery can usually be accomplished without danger. With these criteria in mind it seems best to remove only those tumors which can be dissected out without the necessity of ligating the common or internal carotid arteries.[26] Unfortunately, the necessity for ligation of either of these arteries cannot always be foreseen and often such a procedure is carried out as the only means of controlling hemorrhage. If it is determined at the onset of the dissection that the tumor cannot be removed without sacrificing either of these arteries, the procedure should be discontinued and the tumor treated conservatively.

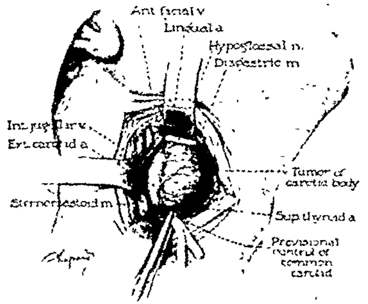

Fig. 1 Incision and exposure of carotid body tumor.

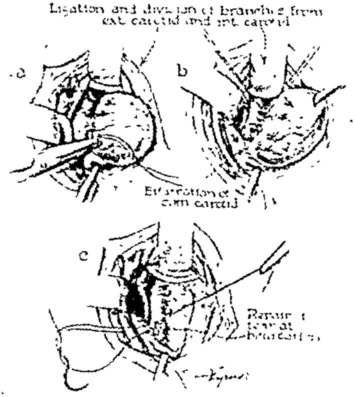
Ligation and division of branches from ext. carotid and int. carotid
a
b
Bifurcation of com carotid
c
Repair of tear at bifurcation

Fig. 2 *A*, ligation of individual vessels going to the carotid tumor *B*, external carotid retracted and internal carotid brought into view. *C*, suture of crotch is commonly necessary because of firm attachment at this location

Bevan and McCarthy[11] reported a case as cured by the use of x-ray therapy. As yet this form of treatment has not been tried sufficiently for an opinion to be formed as to its value.

this method can be employed without fear that its disadvantages will outweigh the undoubted advantages which accrue from its use.

It is probable that some of the complications attributed to the presence of a tube are due to improper use of this device. The practice of progressive shortening of the original tube may be followed by the development of a residual abscess in the lower part of the tract from which the tube has been withdrawn by the shortening process. This can be obviated, and the effect of lateral pressure exerted by the tube on surrounding structures overcome, by adopting the procedure of replacing the tube, after forty-eight hours, by another tube, of equal length but half the diameter. This tube is replaced, after a similar time, by a third, which is about the diameter of bicycle valve tubing, and is finally withdrawn when the condition of the patient warrants it.

Though, as C. Jeff Miller wrote, the mortality from acute appendicitis remains "a menace to the public, a disgrace to the profession and a challenge to those of us who practice the science and art of surgery," it does not appear that this state of affairs will be remedied by impugning the drainage tube. It is to be hoped, therefore, that the present fashion of nondrainage will soon be outmoded and that an improvement in the mortality figures of this disease will be achieved, not by the dangerous policy of abandoning proved methods of treatment, but by a more widespread education of the public that delay is dangerous, and by advising early exploratory operation in doubtful cases. Finally, it would help very much in this direction if the operative treatment of acute appendicitis, which is frequently difficult, ceased to be the function of almost every member of our profession and was restricted, whenever possible, to those men who have proved themselves competent to undertake surgical work.

Sir Alan Newton, M.S. (Melb.),
F.R.C.S. (Eng.), F.R.A.C.S.,
F.A.C.S.,
Melbourne, Australia.

STATE IDOLATRY AND THE A. M. A.

HERE and there in Medical Journals as well as in the lay press, we have had occasion to read favorable and unfavorable comments on the activities of the American Medical Association. Of the out and out opponents, the physician, who has followed all the activities of the Association in the fields of medical education, legislation and public health and observed the constant stimulus given by its publication and meetings to the advancement of medical knowledge, can well disregard the adverse opinions, which are either inspired by socialistic attempts to debase medical practice or by the forlorn hope of the quasi-medical sects to achieve parity with scientific medicine by bringing it down to their level of culture. Also we should not underestimate the great contribution to therapeutic progress which can be traced to the work of the Council of chemistry and pharmacy.

The observation,which is amusing and distressing at the same time, is, that some medical editors, while rejoicing in the results achieved, seem to be reluctant to have to acknowledge their debt to the Association and to Dr. Fishbein. Here and there there are those who believe that many of the functions of the Association should be taken over by the State.

It is very difficult to see how the State could have surpassed the achievements of the Association, particularly in the last quarter century.

Without entering for a moment into the speculation as to whether the state

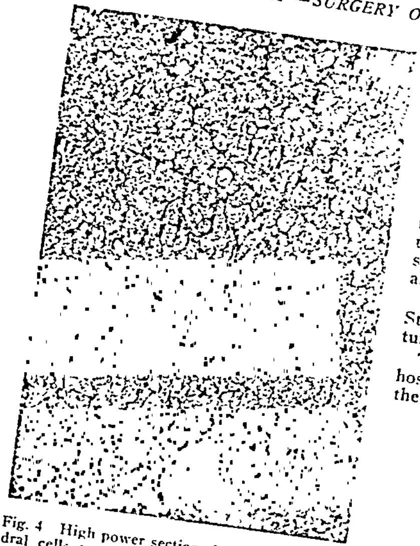

Fig. 4 High power section showing large polyhedral cells arranged in small alveolar units

Case 2. Mrs. M. W., white, age 22, was admitted to Wesley Memorial Hospital January 7, 1938 complaining of a swelling on the right side of her neck which had been present for three years. The swelling had not caused symptoms and the patient was unaware of the gradual increase in size of the tumor, until it was noticed by her family. The past year the tumor had markedly increased in size. During this period the patient noticed that when she was tired the tumor became painful. Pain was also present when she rotated her head to the left side.

Physical examination was essentially negative except for the swelling on the right side of the neck. The tumor was 5 by 3 cm in size and was located in the anterior triangle of the neck at the level of the thyroid cartilage. It was soft and compressible and could be moved from side to side but not up and down. It was not tender, no thrill was felt and no bruit was heard. On compression there were no changes in blood pressure, heart rate or pupillary reflexes. A diagnosis of right carotid body tumor was made.

On January 11, 1938, under general anesthesia, the right side of the neck was explored through a transverse incision (fig. 1). The tumor was found in the bifurcation of the right common carotid artery. It was the size of a hen's egg and was highly vascular. Numerous communicating vessels between the large vessels and the tumor were divided and ligated. In removing the tumor a rent was again made in the bifurcation. This, too, was closed by a continuous silk suture. Hemorrhage was controlled and the incision closed.

The specimen was examined by Dr. E. H. Strauser and the diagnosis made of carotid tumor (fig. 4).

The patient was discharged from the hospital on the seventh day postoperatively, the wound having healed by primary union.

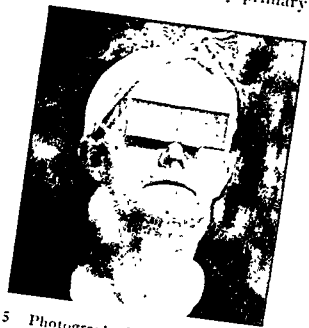

Fig. 5 Photograph showing a bilateral carotid body tumor

Case 3. Mrs. L. P., white, age 50, entered Wesley Memorial Hospital November 10, 1938, complaining of painful bilateral swellings on the neck. The patient stated that 19 years ago she noticed a swelling the size of a bean in the right side of her neck. The swelling gradually increased in size. Ten years ago the patient noticed that the mass "pulsated." During the past five years, in addition to the gradual growth and pulsation of the tumor, the patient began having pain which radiated into the shoulder.

The swelling in the left side of the neck was first noticed about 10 years before admission. This tumor had also gradually increased in size. During the past five years both tumors had become larger and more painful. The pain was described n tinuous dragging pain." The p

AN APPEAL

OUR regent for China, Dr. J. C. McCracken, apprises us that the war in China for the last two years has created a great deal of distress and suffering. All universities but one have been uprooted and moved a thousand miles west, or are carrying on partial programs in temporary quarters in Shanghai. Despite this, students are clamoring to be admitted to the university. Heretofore not more than 20 students have been admitted each year to the freshman class, but this year the faculty has made a special ruling that 30 may be admitted provided the necessary equipment and personnel can be provided.

To carry out this program, more microscopes and equipment are needed. Dr. McCracken appeals for a helping hand.

At a meeting of the Council of the United States Chapter of the International College of Surgeons, $140, the price of one microscope, were contributed by the members of the Council and sent to Dr. McCracken. Anyone who has a microscope not being used or who wishes to aid in this fine work may send his gift to **Dr. John Wood, 281 Fourth Avenue, New York City,** or to **Dr. Alexander Peacock, Stimson Building, Seattle, Washington,** who will forward it to Dr. McCracken. Checks should be sent directly to **Dr. J. C. McCracken, Dean of the Pennsylvania Medical School, St. John's University, Shanghai, China.**

Dr. McCracken concludes his appeal by stating: "The crying need in China today is for more and better trained doctors, and no matter what happens, the need will still be great five years hence, when the class entering this fall graduates. Many of our Alumni are now back of the lines doing everything possible to help care for the sick and wounded, who are giving their lives in this terrible struggle for freedom. More are going this week, one of whom is our resident surgeon in St. Luke's No. 2, making three surgeons we have sent from our hospital. The Surgeon General of the Chinese Army is one of our graduates, as is also the head of the National Health Administration. Let us give to help train men and women to save lives, rather than be responsible for the bullets and bombs that destroy."

This is a worthy cause and merits the support of the members of the International College of Surgeons.

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RÉSUMÉ

Chirurgie des tumeurs du corps carotide

Les tumeurs du corps carotide quoique rares sont rapportées assez souvent. L'anatomie, la physiologie, l'embryologie et la smyptomatologie sont discutées brièvement. Les critériums de la ligature des artères carotides sont précises.

Trois cas sont rapportés. Dans deux des cas, la condition état bilatérale. Dans un des cas de tumeurs bilatérales du corps carotide, la presence d'une tendance familiale est suggérée. La mortalité dans les trois cas fut de trente-trois et un tiers pour cent.

ZUSAMMENFASSUNG

Chirurgische Behandlung der Tumoren der Carotis Drüse

Tumoren der Carotis Drüse sind zwar selten, doch wird über ihr Vorkommen jetzt immer häufiger berichtet. Anatomie, Physiologie, Entwickelungsgeschichte und Symptomatologie werden kurz abgehandelt und die Richtlinien für Unterbindung einer der beiden Carotiden beschrieben.

Bericht über 3 Fälle von Carotisdrüsen Tumoren. In 2 Fällen war das Leiden doppelseitig. In einem von den doppelseitigen Fällen wird eine familiäre Anlage angenommen. Sterblichkeit in den 3 Fällen war 33 1/3%.

SUMARIO

Cirugía de los Tumores de la Carótida

Los tumores de la carótida, aunque raros, se han estado reportando con mas frecuencia. La anatomía, fisiología, embriología, y sintomatología son brevemente discutidas, y el criterio con respecto á la ligadura de la carótida esta subrallado.

Tres casos de tumores de la carótida son reportados. En dos casos la condición era bilateral. En uno de los casos de tumor bilateral de la carótida la tendencia familiar es indicada. La mortalidad en los tres casos fué de 33.3 por ciento.

RIASSUNTO

Chirurgia dei tumori dei corpi carotidei

I tumori dei corpi carotidei, benchè rari, sono riportati con maggiore frequenza. L'anatomia, fisiologia, embriologia, sintomatologia sono brevemente discusse, come pure lè modalità della

stained by potassium salts demonstrating chromaffin bodies have caused many investigators[4] to believe that the carotid body originates from nerve tissue and belongs to the paraganglionic system. Because of the variety of cellular elements, Smith[5] believes "that we are *dealing*, not with a simple organ, for example, one derived from a single outpushing or down-pocketing of an epithelial tube, but a complex one, the components of which have been brought together by processes dependent on the developmental history of the region."

PHYSIOLOGY

As yet no function has been attributed to the carotid body. It is known that the removal of one carotid body does not stimulate the growth of its fellow. It is also true that individuals have been unaffected by removal of both carotid bodies.[6] Moulon found that an extract made from the carotid bodies of horses caused a rise in blood pressure when injected into rabbits. Vassale claimed that when the carotid body was removed in cats, glycosuria developed. Fischer found that when the carotid bodies were removed from cats, a condition not unlike osteomalacia developed. DeCastro removed the carotid bodies at autopsy and was unable to find adrenalin, despite the chromaffin-like material present. Chase[7] states, "It may be that the material which gives the chrome reaction in the carotid bodies is either an adrenalin-building substance, or a substance closely related to adrenalin which does not give its specific histochemical reactions."

PATHOLOGY

Various terms have been used to describe these tumors such as "perithelioma," "paraganglioma," "neuroblastoma," and "sarcoma," depending on the presence of the predominate tissue element. At the present time most authors prefer to call these growths "carotid body tumors."

Tumors of the carotid body vary in size. Often they are approximately the size of a small potato and have been called "submaxillary potato tumors."[8] O'Shaughnessy[9] reported the removal of a carotid body tumor which was the size of a large grapefruit from a Sudanese. When seen at operation, these tumors appear globular and have a thin capsule. They are of rather firm consistency, but their most striking feature is their extreme vasculariy. On section they are grayish red or slightly brownish tan (from chromaffin substance in specific cells). Markings show vessels, plexiform cell masses, concentric structures and hyaline areas. Microscopically, the tumor presents somewhat the appearance of an alveolar perithelioma.[10] The cells are polyhedral, granular, and may contain chromaffin substance. They are arranged in compact groups, without lumens, and are surrounded by numerous capillaries, which manifest hyperplastic endothelial linings. Many larger cell groups have been observed, the central portions of which are prone to degenerate and form cavities in which blood may be found. Definite capillaries may also traverse the cell groups. Hyaline degeneration of cells gives rise to intracellular globules, and affecting the stroma this process produces peculiar knobs, which project into the capillaries. The numerous vessels may produce a cavernous tissue or they may be much reduced into a hard tumor. They are lined by prominent endothelial cells which sometimes grow out into the vessels into symmetrical buds, or mingle with the chief cells of the tumor, producing complex pictures. The stroma may be scanty or acellular, hyaline, or infiltrated with tumor cells.

Bevan and McCarthy,[11] in their excellent report in 1929, found the incidence of malignancy to be 17 per cent in 134 cases. Rankin and Wellbrock,[12] in reporting 12 cases, found 6 to be malignant. Regional nodes are often involved

THE HEPATORENAL SYNDRÓME

TREATMENT

EUGENE ST. JACQUES, M.D.
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GARLOCK and Klein,[6] of the Mt. Sinai Hospital, New York City, in January 1938 brought to the attention of the surgical world a symptom complex with which most surgeons are more or less familiar, the hepatorenal syndrome. It is an intoxication caused by absorption of proteins and is characterized by an insidious onset, usually nervous irritation, often progressing to delirium, coma and death. It was first described by Heyd,[7] who observed its occurrence following intestinal obstruction and after extensive cutaneous burns. The syndrome frequently was observed after abdominal operations, especially those involving the biliary tract, and was believed to be caused by profound chemical changes the exact nature of which could not be determined by existing clinical or laboratory methods. Garlock and Klein concluded from their investigations that those cases which resulted fatally were complicated by extrahepatic infection, for their autopsy findings did not substantiate the clinical diagnosis. Their examination of pathologic livers and kidneys disclosed various conditions, and these frequently were of long standing and of too mild a character to be considered the cause of death.

In France the syndrome was recognized and studied by many clinicians, among whom were Duval and Fiessinger.[8] These observers supposed the syndrome to be due to absorption, the blood having become suddenly deluged with a great amount of dead cellular elements containing more protein substances than the liver could transform. The presence of these cellular elements in excessive amounts was believed to be due to manipulation and tissue destruction. The result was that the patient entered a state of alkalosis or azotemia. Duval termed this state *la maladie post-opératoire*.

ORIGIN

That the hepatorenal syndrome is of toxic origin is evidenced by the great increase of polypeptides in the blood. Polypeptides are toxic proteins, less complex than amino-acids, resulting from the disintegration or catabolism of dead cells. They are normally present in the blood in minute quantities (0.029 mg. per one hundred cubic centimeters). The fact that they are found in larger quantities in the portal vein than in the subhepatic vein indicates that they are broken down by the liver, which organ transforms them into urea. The urea thus formed is for the most part eliminated by the kidney, although a small part remains in the blood together with the untransformed polypeptides.

In a series of examinations of the blood of fifty-three patients on whom operation had been performed, there was an increase in polypeptides in forty-one. In eleven the blood urea was increased, indicating a normally functioning liver. In but one case (duodenal ulcer) of the fifty-three was the content of protein bodies in the blood within normal limits.

Another important and constant finding in these cases is that of hypochloremia. A state of hypochloremia is found in many conditions, but especially in those which, through devitalization of tissue, cause an abnormal [illegible] of outside of the capillary walls which has apparently taken place by diapedesis. Abundance of blood pigment is present in the same location in portions of the tumors and is evidence of injury to the capillary walls rather than a part of a physiological process. Hyperplasia of endothelium has not been observed in any of the tumors, although there was a definite increase of connective tissue stroma in one of the tumors which contained inflammatory infiltration. This increase in connective tissue was not observed in the other cases where degeneration appeared to be not the result of inflammation. The hyaline knobs described by Kaufman were observed in only a limited portion of one tumor, and even in this area there was no more than an incidental relation to the capillaries.

It is probably more important and accurate to interpret the varied histological pictures in terms of pathological changes than to attempt to affix an important physiological function to such a complex histological structure. If these are true tumors, a complex orderly histological structure could not be expected, and on the other hand, if their physiological function were so important, it would be reasonable to expect the tumor to be more common, perhaps paralleling changes in other glands known to be actively functional. Practically nothing has been advanced as proof of the physiological importance of these tumors, although glaring conclusions are based on the histological structure. The term chromaffin tumor and paraganglion tumor are both descriptive of histological structure and suggestive of physiological function but leave us suspended in mid air as to any fundamental truth. Too much has been assumed on the basis of histological similarities without proper chemical and physiological confirmation.

If we assume a physiological function of these tumors, then enlargement of the carotid gland could be interpreted as an increased demand on the part of the body for its product. This would make easily explainable the varied histological pictures in degeneration or involution of the gland when this demand was lessened. In this light such terms of designation as perithelioma of the carotid gland, which is a name of a true tumor, would be misleading.

DIAGNOSIS

The diagonsis of this tumor is seldom made pre-operatively.[17] Lipoma, tuberculous adenitis, branchial cyst and aneurysms[18] are conditions to be considered in the differential diagnosis. The location of carotid body tumors is usually at the level of the bifurcation of the common carotid artery opposite the level of the thyroid cartilage. Occasionally, they are some distance removed from the usual site, as in the case reported by Sheehan and Robiner[19] in which the tumor was located in the parotid region and attached by a long pedicle to the bifurcation of the common cartoid. The growth is usually ovoid or potato-shaped and is partially covered by the sternocleidomastoid muscle. Movement can be elicited from side to side but the tumor cannot be moved up and down due to its attachment to the large vessels. The overlying skin is not adherent, and when the tumor is moderately large a nonexpansile pulsation is felt. Because of the vascularity a bruit can often be heard over the region. Bulging into the pharynx has been noted in the larger tumors. Laboratory tests as well as roentgenograms are of no direct aid in making a pre-operative diagnosis.[20]

All carotid body tumors are characterized by a slow rate of growth. The patient notices a swelling which is painless. Over a period of months or years there is an increase in size. Relief is often sought only for cosmetic reasons. At times pain is experienced on movement of the neck or in lifting heavy objects. Fatigue brings on a dull pain at

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RÉSUMÉ

Le Syndrome Hépaticorénal

Ce syndrome peut survenir après les grandes opéracions abdominales et après certaines autres conditions (brûlures, cancer, etc.). Il est determiné par la présence d'une quantité excéssive de substances toxiques dans le sang—des polypeptides. Dans cet état où le foie est incapable de transformer ces substances toxiques en urée ou le rein est incapable d'éliminer l'urée en quantité suffisante une hypochlorémie resulte. On evite ce syndrome in examinant très minutieusement les malades avant l'operation et en administrant des chlorures en quantité suffisante après l'opération.

ZUSAMMENFASSUNG

Der Heptaicorenale Symptomenkomplex

Der hepaticorenale Symptomenkomplex ist ein ausserst gefährlicher Zustand, er kann auftreten nach grossen Bauchoperationen und gewissen anderen Zuständen (Verbrennungen, Krebs, u.s.w.), bei denen eine erhebliche Menge toxischer Substanzen im Blute kreist (Polypeptide) Er rührt von der unfahigkeit eines Teiles der Leber her, diese toxischen Substanzen in Harnstoff umzuwandeln, oder auch von der Unfähigkeit der Niere genügende Mengen von Harnstoff auszusheiden. Es entsteht Hypochloramie. Verhütung durch sorgfältige vor operative Funktionsprüfungen und durch Zufuhr von genügend Chloriden nach der Operation.

SUMARIO

El Síndrome Hepatorenal

El síndrome hepatorenal es un síntoma complejo potencialmente peligroso el cual puede presentarse despues de operaciones abdominales y en algunos otros casos (quemaduras, cancer, etc.), en el cual la circulación general contiene una excesiva cantidad de substancias, tóxicas, polipéptidas. Esto es debido á la inabilidad del higado á transformar éstas substancias tóxicas en urea ó la inabilidad de los riñones de eliminar la urea en cantidates suficientemente grandes. Hipocloremia la sigue. La prevención se obtiene por medio de cuidadosos exámenes y pruebas funcionales antes de la operación y dandole al enfermo suficientes cloridos despues de la operación.

RIASSUNTO

La sindrome epatico renale

La sindrome epatico renale che pericolosamente sopravviene a operazioni addominali maggiori, come in altre condizioni patologiche (cancro, bruciature, etc.) è dovuta a un eccessivo aumento nella circolazione sanguigna, di sostanze tossiche, polipeptidi; o per una minorata funzione epatica nel trasformare queste sostanze tossiche in urea o perchè il rene non può eliminare urea in quantità sufficiente. Ipocloremia sopravviene. Ricerche funzionali preoperatorie, e somministrazione di cloruri, dopo l'atto operatorio, può prevenire questa sindrome.

REPORTS OF CASES

CASE 1. Mrs. O. C., white, age 42, entered Wesley Memorial Hospital November 18, 1937, complaining of swelling on both sides of her neck. She first noticed the swellings, which were associated with a sore throat, 14 years previously. Following this acute infection, the swellings remained about the size of a plum on each side of the angle of the mandible. A tonsillectomy was performed 10 years ago with no diminution in the size of the swellings. Since that time the swelling on the right side of the neck had remained about the same, while the swelling on the left side had increased to the size of a lemon. Six weeks prior to admission the patient experienced pressure sensations, associated with pain radiating into the occipital region, on both sides of the neck. She had noticed also a definite pulsation in both regions which began with the onset of the pain.

On examination a mass measuring 5 by 3 cm. was present below the angle of the jaw at the level of the thyroid cartilage. The skin overlying the tumor was not adherent. The tumor could be moved from side to side with ease but was not movable vertically. No pain was experienced on palpation. No bruit or thrill was present.

The tumor on the left side of the neck was larger, measuring 8 by 4 cm., and was lobulated. This mass also was movable from side to side but not up and down. The mass could be compressed and after a few seconds it gradually enlarged to its former size. No pain was present on palpation. A thrill was palpable and a bruit was present over the tumor. The remainder of the physical findings were essentially normal except for a moderate hypertension, blood pressure being 164 systolic, 98 diastolic.

Roentgenograms of the cervical region and chest were negative. Urine analysis, blood counts and serology were negative.

The patient stated that her brother had a similar swelling on one side of his neck. This man could not be persuaded to be examined nor would he send a photograph so that an idea could be gained as to the nature of the tumor

On December 2, 1937, the small tumor on the right side was explored through a transverse incision (fig. 1). A highly vascular tumor (fig. 2) was located in, and was adherent to, the bifurcation of the right common carotid artery. There were numerous vessels communicating with both the internal and external carotids. These were ligated and divided. After a careful and tedious dissection the gland was removed (fig. 2*c*). However, near the end of the dissection a rent, 1 cm. long, was found in the bifurcation near the attachment of the tumor. This was sutured with a continuous silk suture and the hemorrhage controlled. A branch of the hyperglossal nerve was involved in the tumor and was removed with it.

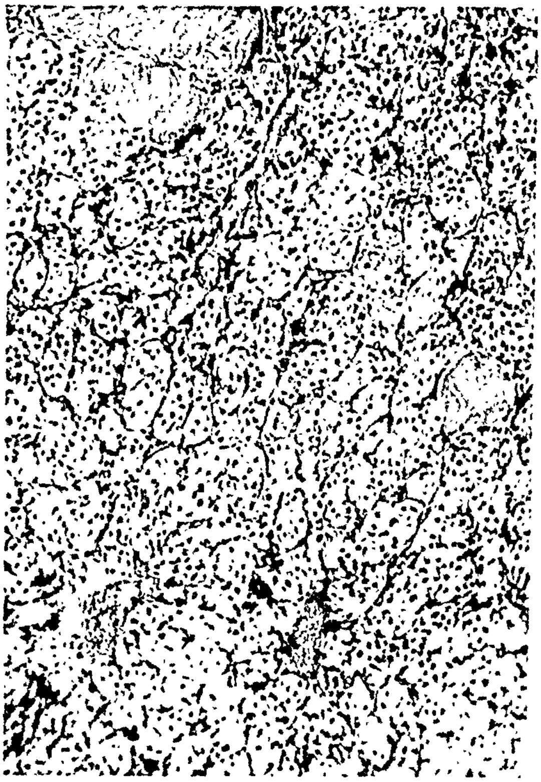

Fig. 3. Characteristic arrangement of compact groups of cells interspersed with numerous capillaries.

The convalescence was satisfactory except for impaired movements of the tongue. The patient was discharged on the eighth postoperative day, the wound healing by primary union.

The specimen (fig. 3) was examined by Dr. E. R. Strauser and diagnosed as carotid body tumor. The patient has refused operation for the removal of the tumor from the left side because she no longer has discomfort. This case is of interest because it undoubtedly is one of bilateral carotid body tumor and the familial tendency is inferred if not proven.

the tissue in question, followed by the ending *oma* when it refers to clinically benign neoplasms, or the ending *blastoma* when it refers to clinically malignant neoplasms.

In accordance with Leriche and Policard, within the elected terminology malignant neoplasms of the bones can be classified thus:

1. Osteogenous osteoblastomas
2. Myeloblastomas
3. Endothelioblastomas.

Osteogenous osteoblastomas originate from osteoclasts, produce bone or are capable of producing it, destroying at the same time the normal bone; the type is fusocellular; in these neoplasms are found bone, cartilage, mucosal tissue, and occasionally myeloplaques, whose presence does not possess any significance as to the benign or malignant quality of the neoplasm; malignancy is affirmed by the existence of numerous mitoses, cellular anomalies, nuclear alterations, vessels without true walls, and histologic polymorphism.

Myeloblastomas arise from the hematopoietic cells and are neoplasms of the globocellular type which become generalized by the lymphatic route (Broca).

Endothelioblastomas are not of interest here; they are of endothelial origin, are not osteogenous, and are not derived from osseous tissue.

PATHOLOGIC CONSIDERATIONS

Osteoblastomas represent malignant neoplasms of the bones. Tumors which are called myeloplaques (Nélaton), myeloplaxic tumors (Ombredanne), osteomyeloplaxomas, are usually benign, but their neoplastic or inflammatory nature is uncertain: the presence of myeloplaques has no particular importance, since there are cases of fibroblastomas with myeloplaques which are very malignant and of osteitis with myeloplaques which are benign; there are found myeloplaques in inflammatory products, around foreign bodies and in malignant osseous neoplasms; the abundant or the limited presence of myeloplaques has no specific pathologic significance.

Differentiation of osteoblastomas began with the works of Boyer and Dupuytren. Since the work of Nélaton on distinguishing benign tumors with myeloplaques from myeloplaxomas, numerous works have appeared on malignant neoplasms of the bones. Leriche and Policard have suggested recently that osteoblastomas are not specific osseous tumors, neoplasms derived from osteoblasts, but fibroblastomas derived from osseous connective tissue, which acquire definite characteristics peculiar to the histologic medium by which they are surrounded.

At any rate, neoplasms designated as osteoblastomas, primary osseous malignant neoplasms, are markedly malignant and tend to the production of metastasis, generalization, and recurrence; the histologic interpretation of them from an anatomopathologic standpoint presents great difficulty due to the diversity of the tissues which are found in them.

Osteomas are rare, but osteoblastomas are much rarer; the excellent statistics of the Mayo Clinic show one case for every 4,000 patients who enter there; over a period of 26 years (1909-1934) only 216 cases were diagnosed in this clinic, there being included 187 cases in which the tissue obtained was utilized for re-examination for clarifying or confirming the anatomopathologic diagnosis, and 29 in which the diagnosis was founded on clinical and roentgenologic data.

Very little is known as to the *etiologic pathogenesis* of osteoblastomas; the role of traumatism, contusion and pathologic or traumatic fracture (Segond, Delbet, Brault, Dehelly, Meyerding, etc.) has been discussed, and the importance of trauma occasionally has been admitted; an attempt has been made to [illegible] n noticed a marked pulsation in both tumors which was accentuated by activity; for the past two years she had experienced a choking sensation with an increased pressure in the sides of her neck on lying down and had been forced to sleep with her head elevated.

Physical examination was essentially negative except for the bilateral tumors of the neck (fig. 5). The mass on the left side of the neck measured 4 by 3 cm. and was smooth and moderately firm. The overlying skin was freely movable. A definite expansile pulsation was present and a bruit was heard over the mass. Firm pressure increased the pain. The mass on the right side of the neck was the larger of the two, measuring 7 by 6 cm.; here also an expansile pulsation was present and a loud bruit was heard. This tumor was also tender on palpation. A diagnosis was made of bilateral carotid body tumors.

Urine, blood, and roentgenographic and electrocardiographic examinations were normal.

On November 15, 1938, under general anesthesia, the tumor on the left side was removed. The dissection disclosed the tumor to be firmly adherent to the external carotid artery and it was necessary to ligate this vessel to remove the tumor. The pathological report was carotid body tumor. The convalescence was uneventful except that the patient continued to have pain and a sensation of pressure over the site of the remaining tumor.

The patient was discharged and returned to the hospital six weeks later for the second operation. On December 28, 1938, under general anesthesia, the tumor on the right side was removed. The tumor was found to be exceedingly vascular and to encircle the large vessels. After a long and tedious dissection, it was partially freed from the external carotid artery, but the tumor and artery were found to be so intimately connected that it was impossible to remove the tumor without sacrificing the artery. In order to control the hemorrhage the common carotid was ligated proximally and tumor and artery were removed en masse. Almost immediately, the patient developed hemaplegia and died two days later.

The specimen was examined by Dr. E. R. Strauser and diagnosed as carotid body tumor.

This case illustrates bilateral carotid body tumors that were causing severe symptoms. The tumor on the left side was removed with great difficulty and with sacrifice of the left external carotid artery. No ill effects were experienced. The tumor on the right was removed only after the common carotid was so damaged that ligation was necessary. This case terminated in death.

SUMMARY AND CONCLUSIONS

Carotid body tumors, although rare, are being reported with increasing frequency. The anatomy, physiology, embryology, and symptomatology are briefly discussed, and the criteria as to the ligation of any of the carotid arteries are outlined.

Three cases of carotid body tumors are reported. In two cases the condition was bilateral. In one of the cases of bilateral carotid body tumors the presence of a familial tendency is suggested. The mortality rate in the three cases was 33.3 per cent.

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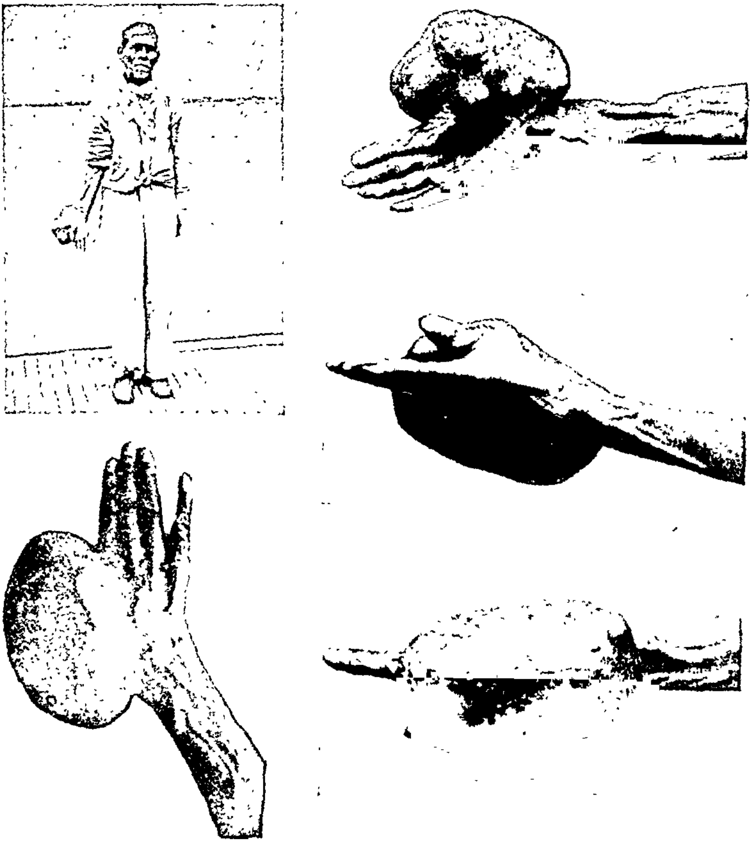

Fig 1 Upper left, patient, 75 years old, with tumor of right hand
Figs 2-5 Lower left, posterior view of tumor Above, anterior, lateral and median views, respectively, of tumor

CLINICAL CONSIDERATIONS

Osteoblastomas are interpreted clinically by pain, osseous tumor and spontaneous, or occasionally traumatic, fracture; pain is a very variable symptom; the tumor is hard, and distended, at times is of unequal consistency, shows rapid growth and presents a very well developed venous net-work; as time passes the general condition declines, cachexia appearing; the tumor may reach a monstrous volume; clinically there can be found, with more or less clarity, parchment-like crepitation, pulsation, impulsion and even aneurismatic expansion of the tumor; there may be

legatura delle carotidi. 3 casi di tumore del corpo carotideo vengono riportati. In un caso, di tumore bilaterale, la presenza di una tendenza familiare e suggerita. La mortalità nei 3 casi è stata del 33 per cento.

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Dr. André Crotti, President of the International College of Surgeons, has been vacationing at his summer home at Wequetonsing, Mich.

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Prof. Dr. Rudolf Nissen, of Istanbul, Turkey, Vice-President of the International College of Surgeons, is spending his vacation in the United States as the guest of Dr. Edward D. Churchill, of Boston. He is accompanied by Mrs. Nissen and daughter.

o

Dr. M. M. Cruickshank, of Madras, India, one of the regents of the International College of Surgeons, is vacationing in the United States. After a week's stay in Chicago, he proceeded to The Mayo Clinic and other points of medical interest.

Dr. Charles H. Arnold, of Lincoln, Nebraska, Secretary of the Scientific Assembly, United States Chapter, will address the Pan-Pacific Surgical Society in Honolulu, Hawaii.

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Dr. Donald C. Balfour, of the Mayo Foundation, and Prof. Peter Bull, of Oslo, were admitted as honorary fellows of the Royal College of Surgeons, England, at the quarterly meeting of the council on July 13.

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Dr. Fred H. Albee, International President Elect, has been called to Europe. He is attending some clinics in Europe and is conducting some clinics abroad. He is expecting to return by October 1.

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NATIONAL ASSEMBLY

THE NATIONAL ASSEMBLY OF THE UNITED STATES CHAPTER OF THE INTERNATIONAL COLLEGE OF SURGEONS WILL BE HELD ON FEB. 11 TO 14, 1940, AT VENICE, FLORIDA, UNDER THE DIRECTION OF DR. FRED H. ALBEE, INTERNATIONAL PRESIDENT-ELECT, AND THE PRESIDENCY OF DR. FREDERICK M. DOUGLASS, PRESIDENT OF THE UNITED STATES CHAPTER AND CHAIRMAN OF THE PROGRAM COMMITTEE.

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Fig. 6. Roentgenogram of tumor.

ence of the majority of cases of this type of cancer, surgery was decided upon, on the grounds that it would be the most suitable of all methods of treatment.

Let it be recalled that amputation is preferred by some and disarticulation is preferred by others. I have followed the criterion of the Lyon school, conserving operations, atypical resections, regular resections; it is thought that extensive mutilating operations are useless when metastases are present, or excessive in the contrary case; the best surgical conduct is, naturally, to exceed amply the limits of the tumor, if this is possible, and not to sacrifice the extremity, in conformity with the advice of Nove-Josserand and Tavernier.

Roentgenotherapy and radium therapy should be reserved for cases in which it is not possible to employ surgery, the results with them are not satisfactory.

Conservative surgical intervention was thus decided upon, taking into account the apparent benign quality which the clinical development indicated.

Pre-operative examinations were made (urea, coagulation time, hepatic function, urine, Wassermann, Van Slyke), which were made by Drs Gustavo Argil, Roberto Alfaro Trejo and Esther Chapa, the results were all normal.

Operation was performed August 17, 1933, with the assistance of Dr Teodoro Flores Covarrubias; protoxide of nitrous oxide anesthesia was administered by Dr. Salvador Santoyo Aguilar; amputation of the thumb was performed with total removal of the metacarpal bone, a delicate monopolar electric bistoury, constructed by Dr. Flores Covarrubias, was employed for the section; atypical technic had to be used because the anatomic landmarks were miss-protein bodies to be thrown suddenly into the circulation, as in burns (radium and x-ray burns included) and cancer. Investigations have shown that excision of cancerous tissue is usually followed by a decrease in amount of the toxic proteins in the blood and an increase in the chlorides toward normal.

The toxic effects of an excessive amount of polypeptides in the blood is not open to doubt. Abderhalden[1] and Miyagawa,[6] as well as others, have confirmed it. Postoperatively these effects appear very gradually; they may commence within forty-eight hours or be delayed as long as five or six days. The earliest noticeable symptoms are somnolence and mild nervous irritation. Depending on the resistance of the patient, that is, the functioning of his liver and kidneys, and the severity of intoxication, or amount of absorption, these symptoms disappear or continue. If they persist they may become aggravated, gradually or suddenly, so that delirum or coma supervenes and a fatal outcome often results.

TREATMENT

Since it has been proved that the hepatorenal syndrome is one of absorption and intoxication, the liver and kidneys being largely responsible for elimination, it is of vital importance that these organs function as nearly normally as possible. Even when these organs are normal, it is wise to take certain precautionary measures to restore any depletion of the alkaline reserve (Duval, Roux and Goiffon).[4] The preoperative administration of hypertonic solution of sodium chloride in sufficient quantities will do much to prevent the hepatorenal syndrome and to safeguard the life of the patient. Furthermore, being an active intestinal stimulant, it will hasten bowel evacuation. Its use, when indicated, should not be neglected.

The method of administering hypertonic solution of sodium chloride and the amount to be given are largely a matter of choice. Duval gives from 20 to 50 cc. of a 10 per cent solution intravenously each twenty-four hours. In the University of Montreal Hospital a simple procedure that we have named the "2-2-2" is used. Immediately after operation a mixture consisting of 2 tablespoonfuls of sodium bicarbonate, 2 tablespoonfuls of brandy, from 1 to 2 teaspoonfuls of sodium chloride and 2 cupfuls of strong black coffee is given by the Murphy drip. After this has been absorbed, from 500 to 800 cc. of pure warm water is given. The same procedure is performed on the succeeding day, and if, despite these measures, any symptoms suspicious of a beginning hepatorenal syndrome appear, from 20 to 30 cc. of sodium chloride hypertonic solution is administered intravenously.

SUMMARY

The hepatorenal syndrome is a potentially dangerous symptom complex which may occur after major abdominal operations and certain other conditions (burns, cancer, etc.), in which the general circulation contains an excessive amount of toxic substances, polypeptides. It is due to inability on the part of the liver to transform these toxic substances into urea or to the inability of the kidney to eliminate the urea in sufficient quantities. Hypochloremia ensues. Prevention is by careful preoperative functional tests and by supplying the patient with sufficient chlorides after operation.

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f the present work; after conquering chnical difficulties, which required the use of photographic filters because of the inevitable action of time (six years have elapsed since the original coloration),

we have been able to obtain o microphotographs which illus various aspects (figs. 7-9). general view of the tu great masses of small c

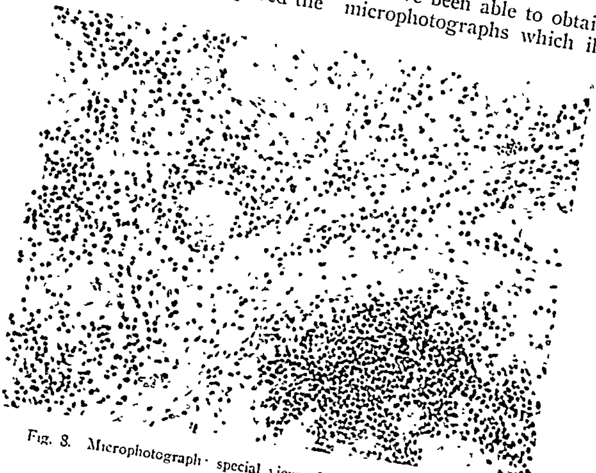

Fig. 8. Microphotograph: special view of masses and groups of cells

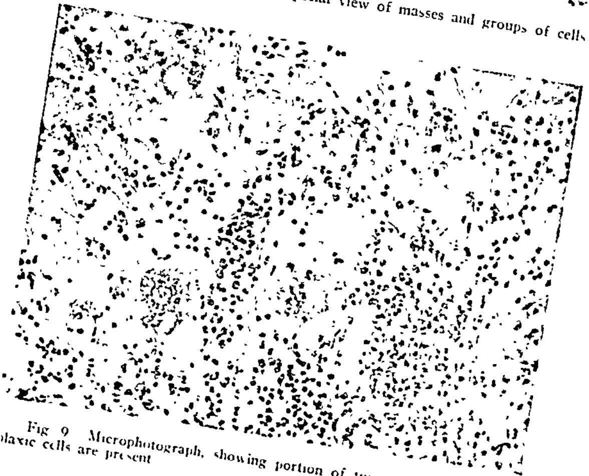

Fig 9 Microphotograph, showing portion of tumor in which myeloplaxic cells are present

PRIMARY OSTEOCHONDROBLASTOMA OF THE METACARPUS

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THE theory that the mesenchymatous tissue is exclusively of mesodermic origin has been abandoned at the present time and it is believed that a part of this tissue comes from the epithelial layers.

In fact, it is stated that the mesenchyme includes the common connective and vascular tissues which are always associated together, giving rise, by virtue of functional transformations, to the tissues of support (bone, cartilage), the muscles (striated and smooth), the adipose and endothelial tissues; the connective-vascular tissue, by means of the process in question, remains intimately connected to the entire group of aforementioned tissues or secondary formations.

The cartilage and the bone are originally mesenchymatous tissues, the peculiar histologic characteristics of which are distinguished respectively by chondrin, secretion of chondroblasts, and ossein, secretion of the osteoblasts; the connective-vascular tissue is always associated with the morphogenetic action of the perichondrium and the periosteum, or serves as a guaranty of the histologic nutrition.

NOMENCLATURE OF NEOPLASMS

Neoplasms of the following tissues are described:

1. Common connective-vascular
2. Adipose
3. Skeletal
4. Muscular
5. Endothelial.

Classically benign neoplasms of the mesenchymatous tissues are designated by the corresponding radical, followed by the ending *oma* (fibroma, osteoma, chondroma, etc.), the denomination of sarcoma being reserved for malignant tumors, usually in opposition to epithelioma.

As the result of the efforts of the American Registry of Bone Sarcoma to establish a needed classification for the study of malignant tumors of bones, the Clinical Pathological Association entrusted the study of the matter to MacCarty, Sonders, St. George and Bell, acting in collaboration with the original committee, for the purpose of preparing as accurate a classification of osseous tumors as possible. If this classification were applied to the case which is the theme of the present study, the denomination would be osteogenic tumor of the malignant type, osteogenic sarcoma, which would correspond to osteosarcoma ossificans, in accordance with Leriche and Policard, cited by Miginiac; nevertheless, despite an acceptable classification, the classical terminology, which has been discussed so frequently from the standpoint of clarity, will persist essentially.

I have adopted the terminology praised by Zuckerman, which seems to me to be simple and clear; Benitez Soto has recently given his attention to this terminology, insisting on the advantages which are obtained from simplifying the elaborate nomenclature of neoplasms. The denomination employs numerous compounds for the radical of obtained from it; complete exeresis, but without great mutilation; I sincerely believe that the Lyonese school would consider this case an example of complete exeresis.

I believe the type of operation performed is sufficient, as far as is naturally possible, to eliminate up to a certain point the postoperative danger which certain cancers cause; after the operation, the cancerous cells which are in lethargy can awaken and grow with relative rapidity due to the decrease of pressure in the regions immediately adjacent to the loss of substance produced by the surgical exeresis and due to the stimulation of the neoformation which accompanies the phlegmasia in the processes of pathologic regeneration.

CONCLUSIONS

From this study, I can conclude that the scientific significance of this particular experience is as follows:

1. Roentgenographic study is of great usefulness for establishing the diagnosis.
2. The anatomopathologic study is of prime importance for establishing the malignancy of the tumor.
3. There are reasons for eventual divergencies in the clinical characters with respect to the benign or malignant quality of the tumor.
4. Caution should be used in the interpretation of the morphologic phenomena, classical indications of the malignancy of the tumor.
5. Surgery of cancer is surgery which is based on complete exeresis.
6. Experience and personal judgment should establish, according to the case, the doctrinal interpretation suitable for complete exeresis.

SUMMARY

A case of primary osteochondroblastoma of the metacarpus occurring in an old man, aged 75, is presented: pathologic and clinical considerations are made as to the characteristics and development of this type of malign neoplasm, rare as to frequency in g eral and as to localization in this case particular; the clinical history and t treatment used, which is discussed, a set forth. Comments are made, concl sions as to the following being derive from them: the usefulness of roentgeno graphic study for establishing the diagnosis; the importance of anatomopathologic study for determining the benign or malignant quality of the tumor; variations present in the clinical characters with respect to the benign or malignant quality of the tumor; the need for caution in the interpretation of the morphologic phenomena, classical indications of the malignancy of the tumor; surgery of the cancer being based on complete exeresis, experience and personal judgment must establish the doctrinal interpretation.

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strate experimentally the possibility of grafting, inoculation and contagion (Carrel, Gye, Barnard, Fujanami, etc.), without arriving at unquestionable results.

Observation has pointed out courses of action in the clinic, but there is almost complete ignorance as to the how and why of the pathologic characteristics, important elements for clinical diagnosis; microscopic examination of the neoplasm extirpated at times shows ostensible unsuspected divergencies.

AGE GROUPS AFFECTED

Osteoblastoma presents itself in young subjects between 10 and 30 years of age and in adults not older than 45 years; it is observed more frequently, according to Miginiac, in the female than in the male; Mayerding, according to statistics of the Mayo Clinic, considers it to be more frequent in men than in women in the proportion of two to one. Therefore osteoblastoma is the cancer of youth, in contrast to epithelioblastoma which is the cancer of the critical age and senescence.

LOCATION

Osteoblastoma can attack all the bones, but observation has shown that there are certain sites of election, specifically those attacked by the osteomyelitis of adolescents, that is, the large long bones, especially the epiphyseal zone.

The bones usually invaded are, in the order of their frequency: femur and tibia, humerus, maxillas, the small flat bones very rarely; thus it seems that the frequency of osteoblastoma is in proportion to the size of the bones.

Bérard and Polloson, cited by Miginiac, give the following percentage of localizations:

Large long bones . . .	63 per cent
Flat bones	17 per cent
Maxillas	15 per cent
Bones of the hand	5 per cent

In the long bones the diaphysis is attacked in 15 per cent of the cases; in the 85 per cent remaining cases the epiphysis is attacked, frequently the one called the fertile epiphysis; the neoplasm begins in the bulb, the metaphysis or the neighboring epiphyseal zone, secondarily invading the epiphysis; the point of departure of the neoplasm is in relation to the existence of the epiphyseal cartilage, because in adults growth has terminated and the epiphysis and the diaphysis have become united.

ORIGIN AND DEVELOPMENT

Classically, osteoblastomas can originate deeply or superficially; in the first case (deep osteoblastoma, central osteoblastoma) the neoplasm invades the bone eccentrically, perforates the cortex and causes it to crack, sending out papillae below and outside the periosteum, generating by periosteal reaction lamina, osseous spines and exostoses which reveal roentgenographically the malignancy of these neoplasms; in the second case (superficial osteoblastoma, periosteal osteoblastoma) the neoplasm arises in the periosteum, surrounds the bone in a ring-like manner and invades it slowly in a manner opposite to that in which the process is effected in the first case, but producing similar lesions.

Osteoblastomas are, as a rule, very voluminous neoplasms macroscopically, reaching at times a truly extraordinary size in comparison with epithelioblastomas; they become generalized in an ominous manner, giving to the extremely grave prognosis a suggestion of something irremediable, terrible and dreadful; generalization takes place by the venous route, the lymphatic route being exceptional; this accounts for the frequency of pulmonary metastases which, in turn, send cancerous emboli through the left side of the heart to the main circulation, creating new metastases, frequently multiple, which can appear in any viscera or bone whatever, and produce new blastomas primary in type.

L'importanza dell'indagine roentgenographia nella identità diagnostica del tumore, come pure dello studio anatomopatologico e clinico per la determinazione della benignità o malignità del tumore stesso è rilevata. Prudenza è necessaria nella interpretazione dei fenomeni morfologici. Il procedimento chirurgico è basato sulla completa exeresis. L'esperienza e criterio individuale devono precisare l'interpretazione dottrinale.

* * *

The John Lucas Walker Studentship of the University of London for original research in pathology, of the value of £300 a year for three years, has been awarded to **J. C. Colbeck**.

Dr. F. Wood Jones, professor of anatomy at the University of Manchester, will retire at the end of the Michaelmas term.

La Academia Nacional de Ciencias Antonio Alzate has elected **Dr Max Thorek**, present acting executive secretary of the International College of Surgeons, Foreign Academy Member.

Petrification of Anatomic Specimens

A method of petrifying anatomic specimens was presented by **Prof. Francesco Spirito**, head of the obstetric and gynecologic clinic of Siena University, in a lecture delivered recently before the Accademia dei fisiocritici of Siena.

Professor Spirito presented specimens of structures of the human body which were petrified by his method, by means of which it is possible first to petrify organs for studies on the external aspect of a given lesion and then to depetrify them for microscopic study The procedure does not cause histologic alteration of the organs. He showed a piece of marble united with petrified specimens of viscera. This recalled the work done by Segato, who made a table with a mosaic which contains 214 anatomic specimens of human viscera and resembles multicolored marble; the table is preserved in a museum.

The speaker delivered the formula for his method of petrification to the Accademia dei Lincei; he is attempting to improve the method before he publishes it. Segato, Gorini and Marini, who previously obtained good results with this work, never disclosed their methods

Dr. André Crotti read a paper on "How Can a Committee Run a Cancer Clinic with Small Financial Support" at the International Cancer Congress held recently in Atlantic City.

Bassini's Operation

The anatomic-physiologic principles of Bassini's operation were reviewed by Professor Catterina of Rome University in a lecture delivered recently before physicians of the garrison at Rome. Catterina, who was a pupil of Bassini, said that the operation is of social importance, the frequency of hernia being more than 15 per cent in workers in some industries.

Bassini performed the operation for the first time in 1884. He presented the first scientific report in 1886 and published his monograph in 1889. The monograph had some defects both in the text and in the illustrations; thus the technic was erroneously interpreted and modifications were ordered. Catterina later published a complete textbook on the operation with sixteen illustrations which were done by the painter Gaigher This book was published in five different languages.

Bassini believed that the fascia transversalis is not the posterior aponeurosis of the transverse muscle. It is a membrane of varying thickness in different persons which originates at the small pelvis and goes over and behind the transverse muscle to the costal arches. Bassini's operation is based on the principle of providing the inguinal canal with a posterior wall which is made up of the fascia transversalis and the transverse and small oblique muscles. The muscles stretch in a special manner after the operation, because of the different course of their fibers, and prevent contact between the abdominal the inguinal cord and the compression on the latter.

observed hemorrhagic pleural effusion, the phenomenon of pulmonary or tracheo-bronchial metastases, daily fever and local elevation of temperature; it has previously been said that it usually affects young subjects, producing metastases by the venous route, assuming that the tissue of these neoplasms does not possess lymphatics.

Osteoblastoma is fatal, the life of the patient terminating because of cachexia and cancerous generalization in a short time, less than two years or only a few months; the fatal ending is the more rapid the younger the patient, although writers have reported rare cases in which the development has been more slowly, no plausible explanation having been given for this phenomenon.

The differential diagnosis should include, especially at the beginning, osseous tuberculosis of the epiphysis, osteomyelitis, syphilis, and osteomas. One should take into account the rarity of osteoblastomas and one should not forget the use which can be made of roentgenographic studies. In all cases, generally speaking, the slow development of the tumor can dismiss malignancy, and with added reason if the general condition has not undergone change and if metastases are not present.

When the diagnosis of the tumor has been established as malignant, the important thing is to determine whether it is primary or secondary; in the first case the diagnosis of osteoblastoma will be determined; in the second it might be a case of osseous metastases of epithelioblastoma—breast, prostate, kidney, suprarenal glands—and with greater reason if it concerns a subject of more than 50 years of age.

CASE REPORT

A. A., 75 years of age, married, a day laborer, [illegible] entered the General Hospital August 2, 1938.

Questioning revealed family [illegible] the parents and brothers having died at an advanced age; the personal history was unimportant.

Seven years ago a small tumor appeared on the dorsal surface of the right hand, between the index finger and the thumb, without any local reaction; the tumor had grown slowly for three years and had reached approximately the size of an orange; intermittently it was painful; the pain, pricking in quality at the beginning and localized at the site of the tumor, later extended to the entire member, posteriorly, in a manner impossible to describe; during the next four years growth continued until the tumor reached its persent size, approximately a little larger than a grapefruit; it was oval, hard, somewhat adherent to the deep layers, very vascular and covered with lustrous and ruddy skin (figs. 2-5). The pain was pricking and intermittent and prevented sleep at times.

Inquiry by systems disclosed only blindness and deafness of little importance.

Physical examination revealed a male of the above-mentioned age; no abnormalities were found in the neck, thorax, abdomen, genito-urinary organs or lower extremities; pallor of the palpebral and buccal mucosa, thinness of the upper extremities, and axillary microadenitis were observed.

Roentgenologic Examination: Fluoroscopic examination of the thorax was without significance. A roentgenogram (fig. 6) of the tumor showed an image corresponding to an enormous osteoblastoma, with the point of departure at the level of the lateral (or external) border of the hand (carpus-metacarpus); the tumor had destroyed and infiltrated the first metacarpal bone and the first phalanx; there was noted production of osseous tissue of new formation (blastoma), which was disposed in radial form or distributed within the tumoral mass, without definite limits being observed and with a definite tendency to growth and to increase of the neoplastic mass. The roentgenologic diagnosis established a marked contrast to what could be derived from the purely clinical examination; it was a case of osteoblastoma, of malignant neoplasm.

Treatment The lamentable results obtained from surgery, roentgenotherapy and radium therapy in the treatment of osteoblastomas were considered, these being so consistently poor that when a patient upon whom amputation or disarticulation has been performed survives, one is led to think of a possible error in diagnosis; notwithstanding the gravity of the diagnosis and the sad experipatients, but due to the limitations previously outlined, it is necessary to look for substitutes capable of aiding students in their first steps taken in the field of the clinic.

The cadaver anatomically is fitted for teaching numerous explorations which can be called "objective," and the living animal, for teaching explorations which are principally functional.

To make some explorations it will not be necessary to prepare the cadaver previously, as for posterior rhinoscopy, laryngoscopy, gastroscopy, spinal puncture, etc.; and for others, with moderate adaptation, cadavers can be prepared for exploration of fractures, luxations, synovial affections (injected to simulate effusions), etc.

It is evident that it is a question of obtaining results anatomically similar to those obtained in patients; for example, in the case of luxation produced in the cadaver there will be obtained conditions of deformity, abnormal mobility or limitation of movement, etc., very similar to those which are observed in a case of luxation in a living subject; but it will be very difficult to imitate hematoma and impossible to imitate edema, sensitiveness, etc.

PROCEDURES

Despite these limitations, there are numerous examples of its great usefulness, as I have been able to observe in the lecture room, and as can be deduced from the following list of procedures carried out on the cadaver.

Head: Injection of coagulated blood below the scalp or epicranium to obtain sanguineous crepitation; injection of air to demonstrate gaseous crepitation.

Percussion of the Cranium: Normal zones obtained by percussion; changes observable after injection of blood into the extradural space or air into the ventricles; crack pot sound after fracture of the cranium.

Spine: Pharyngeal palpation of the atlas, the axis, and the subsequent cervical vertebrae; spinal puncture, lumbar, dorsal, cisternal, epidural; previous preparation of the cadaver—fractures.

Neck and Thorax: Esophageal catheterization, esophagoscopy, gastroscopy; pleural, pericardial, etc., punctures; fractures of the ribs.

Abdomen: Palpation of the organs, followed by verification of the data obtained by autopsy; rectosigmoidoscopy.

Genito-Urinary Apparatus: Tactile vaginal examination; unrethroscopy, urethral catheterization; cystoscopy and ureteral catheterization; insufflation of the uterine tubes.

Extremities: It is possible to reproduce or imitate almost all the luxations and fractures by means of simple pressure. Injection of the synovial bursa of the knee permits one to note on palpation its superior and inferior limits, to feel its fluctuation, to provoke patellar impact, etc.

COMMENT

As is natural, preparation of the cadaver to obtain the type of luxation and fracture which it is desired to demonstrate presents difficulties at times; although it is a good method for imitating the common mechanism of fractures, the disappearance of tonicity and of muscular contraction causes the result to be varied; to avoid this one can have presses constructed, by means of which it is possible to exert gradual and circumscribed pressure in the place which one desires, pressure which can be sufficiently intense to produce fractures.

The experience which I have had up to the present time with the usefulness of these practices on the cadaver has convinced [illegible]

Consider
difficulties
surgical pr

ing; the tumor was so large that the raw surface could not be covered sufficiently; thus about two-thirds of it had to be left uncovered.

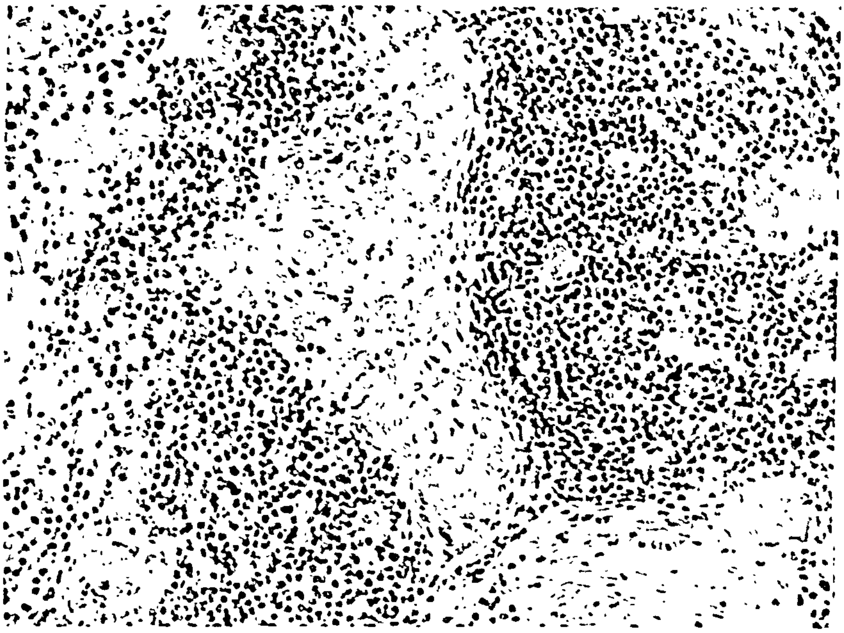

Fig. 7. Microphotograph of tumor, general view; no irregularities or nuclear monstrosities of importance are perceptible.

The postoperative development consisted in gemmation and convergent epidermization until total cicatrization had occurred, without any defect in the formation; the first two treatments were given with ambrine at an interval of 72 hours, the three following treatments with dermotrophyl at intervals of five days, and the remainder, until the patient was dismissed, with genuine dermotrophyl at intervals of a week. The patient left the hospital October 4, 1933, 48 days after surgical intervention, apparently in good health.

PATHOLOGIC REPORT

Dr. Ignacio Gonzalez Guzman made an anatomopathologic study of the neoplasm which was removed, his report being as follows: tumor of the hand, 1.127 Kg. in weight, 18.5 cm. in the long axis of the member, 13 cm. in width, 11 cm. in height. The specimen was fixed in 10 per cent solution of formalin, cut for freezing and stained with silver carbonate. Fragments of the piece presented a somewhat diverse microscopic appearance. Study of the pieces showed that it was a neoplasm derived from mesenchymatous tissue. It was considerably polymorphous and presented a quite varied appearance; in some portions the texture was purely chondromatous, with encapsulated cells and characteristic intercellular substance; other portions of these formations were infiltrated with calcareous salts and the osseous formation was outlined at the expense of the cartilage; finally, in others there were groups of unequal cells, some monstrous without any structural arrangement and with fibrillar texture, intercellular, of medium richness; in some cut sections myeloplaques were observed. Interpretation: Osteochondroblastoma. There existed a low grade malignancy because of the polymorphism with cartilaginous formation and above all, osteogenic function, medium nucleolar richness of the tumoral elements, slight destructive tendency; Dr. Guzman attributed this to the presence of myeloplaques.

Dr. Guzman was good enough to reexamine the microscopic preparations for the microphotographic illustrations incision. The patient recovered That is what a knowledge of anatomy did for the patient.

Dr. Vincent A. Lapenta, Indianapolis: The paper of Professor Esnaurrízar is providential to this meeting, in view of the activities that we have proposed in the postgraduate teaching in the guilds of the College in every locality. It focuses attention on certain changing trends which we hope to correct, as far as the teaching of surgery is concerned.

In the last few years the teaching of anatomy in many medical schools has passed into the hands of the morphologist, who is often not even a physician, and whose great interest is in descriptive anatomy. And that teaching is supposed to supply the prospective doctor of medicine and surgery with a sufficient anatomic basis on which to build a surgical career Our forefathers were wiser than we. They insisted on teaching surgery from the cadaver, the teaching to be done by clinical surgeons and not by an anatomist. I am glad to say that we are reverting to that. Knowledge of topographic anatomy in itself is not sufficient preparation for the practice of surgery. Therefore, study of the cadaver, as Professor Esnaurrizar pointed out, as a means of learning how to differentiate in the diagnosis and as a means of performing classic operations on proper anatomic foundation, comes back again as the proper foundation for the method of teaching, and, with it, the teacher must be a surgeon.

The prospective candidates who wish to obtain fellowship in our organization—and I am speaking of all the chapters of the College throughout the world—must give demonstrations of surgical ability on the cadaver and on the living before they can become a fellow member.

And so it gives me pleasure, as an officer of the guild activities, to ask all co-officers in their respective states to bear in mind that the new members must all qualify by examinations Stress must be laid on demonstrations of surgical procedure on the cadaver, on differential diagnosis and on the surgical anatomy of a given operation. By enforcing this requirement the International College of Surgeons shall have brought about a *renaissance* in the teaching of surgery.

Dr. Thomas E. Jones, Cleveland: I am happy to endorse what has been said about the last paper. From my surgical experience on various parts of the body, I know of no operation in which a knowledge of anatomy serves one in better stead than in the one stage operation for cancer of the rectum I have been interested in this procedure for many years and have performed many such operations As I look back on my first cases, when I did not realize the importance of surgical anatomy, I must have appeared very cumbersome and awkward in the performance After a few cases I followed closely the course as described by Miles, of England. That facilitates the procedure so much that it looks easy. It seems to me that the surgeons who get into difficulties with this operation are those who are not impressed with the importance of doing the operation in certain steps. I am sure that my original errors were made because I did not do the operation methodically. If one starts with ligation of the superior mesenteric artery, the first step, and does the other steps in logical order, the operation is simple. And that is done only by a thorough knowledge of the anatomy.

RÉSUMÉ

Utilité Didactique du Cadavre dans la Propedeutique Chirurgicale

On considère les difficultés inhérentes à l'enseignement de la propedeutique chirurgicale, en ce qui concerne la démonstration individuelle de signes ou symptômes, dont la perception est entièrment personnelle; difficultés d'ordre clinique dues à l'impossibilité de disposer à un moment donné de malades adéquats; dangers auxquels on expose les dits malades dans les explorations répétées, avec autant plus de raison s'il s'agit de groupes scolaires nombreux.

On préconise l'utilisation du cadavre comme auxiliair dans l'enseignement de cette clinique, en éliminant avec elle le péril que présente pour le vivant la démonstration de certains signes physiques: crépitation osseuse, choc rotulien, etc. On formule ensuite un plan didactique de cette sorte de travail clinique, dont l'utilité pédagogique a déjà été démontrée par l'auteur au cours respectif dont il est chargé à la Faculté de Médecine de Mexico.

ZUSAMMENFASSUNG

Die Nützlichkeit der Leiche in der chirurgischen Propedeutik

Betrachtungen der Schwierigkeiten gebunden an den Unter [illegible]urgischen Propedeutik cytoid nuclei and groups with larger nuclei, among which no great irregularities or nuclear monstrosities are perceptible; figure 8 is a special view of the masses and groups of the mentioned cells; figure 9 is a portion of the tumor in which cells of the myeloplaxic type are present, mingled with smaller cells and lymphoplasmocytic elements.

COMMENT

The anatomopathologic study is conclusive and confirms in detail the roentgenographic interpretation; it was a case of osteoblastoma, metacarpal osteochondroblastoma; the exact denomination is primary metacarpal osteochondroblastoma, a rare cancer, the development of which in this particuclar case was that of a benign neoplasm.

At the present time six years have passed since the surgical intervention; during the first four years I saw the patient several times and he was apparently enjoying good health at his work in the country, in Xochinaca, State of Mexico; but since then I have not heard of him, despite my inquiries; I do not know whether he is living or dead, and, if the latter is true, whether his death was caused by a recurrence or by his advanced age; but at any rate, the case is extremely interesting. Irradiation was not used because it is known that osteochondromas do not respond to this treatment; neither were the toxins of Coley used because, for some time, the general opinion of this method, derived from old ideas on the therapeutic action of streptococcic toxins, has been that it does not seem to have given the good results which have been attributed to it on occasions.

Results which are obtained with mutilating operations, amputation or disarticulation, are judged wrongly. It is mentioned that from 80 to 90 per cent of the operations are followed by recurrence before two years, despite the very personal opinion of Lecène and Huet that in their practice these results are not brilliant, but they believe them superior to those obtained with conservative operations; Lecène and Huet do not give statistics on this matter so that their statement is reduced to an opinion or a very personal appreciation. Moreover, we must take into account that, notwithstanding the statistics and the cases reported in the literature, oftentimes an uncertain or incorrect diagnosis is encountered in clinical practice; I shall not attempt to say that statistics do not have great orientating value, but it is necessary to be cautious and to proceed thoughtfully in each case.

Broca maintains that despite the poor surgical results in children and the lamentable ones in adults, one should always operate whenever possible because, poor or lamentable as the results are, life seems to be prolonged by surgery, and this is a great accomplishment; roentgenotherapy and radium therapy should be reserved for the inoperable cases.

No matter what is said, surgery of cancer is surgery which is based on complete exeresis, amputation or disarticulation in the case of osteoblastomas; at the present time it is the best therapeutic method, provided that it is used with intelligence and judgment; complete exeresis in the present case would not have meant amputation of the forearm or the arm, or disarticulation at the wrist, the elbow or the shoulder, because such procedure would have constituted a barbarous rather than a complete exeresis, for scientific purposes, and would have been inadvisable from a social standpoint because it would have made an invalid of a man who, in his old age, desired and found it necessary to work.

Complete exeresis was carried out, based on a happy medium which was derived from an appropriate fitting doctrinal interpretation; complete, but without a resulting damage more important than the good which could be

INCOMPLETE DUODENAL DIAPHRAGM AS A CAUSE OF INTESTINAL OBSTRUCTION

REPORT OF A CASE*

CHARLES EDWARD NAGEL, Ph.G., M.D., F.A.C.S., F.I.C.S.

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the genesis of duodenal mal-
ormations, embryologists state
hat at about the fifth week of
e, the primitive gut, by the
tion of the intraluminal epi-
lls, becomes a solid tube, which
proliferated epithelial cells
hereafter begins to undergo re-
by a process of vacuolation.
l result of this process is the
ishment of the normal gastro-
l lumen. When anomalous con-
are considered, one finds no
ty of opinion. One group of
ogists believes that the malfor-
are due to some faulty process
he vacuolation of the epithelial
A second group advances the
hat, as a result of amniotic fluid
the primitive gastro-intestinal
intraluminal inflammatory re-
produced which retards or pre-
e process of vacuolation. I in-
the opinion of the first group.
se of the incomplete regression
roliferated epithelial plug dur-
process of vacuolation has not
termined.

hree types of malformations of
denum usually described are:
stenosis, and *diaphragms*. The
e of congenital obstruction in
born has been estimated as 1
0 cases (Farr and Fries), and
d seem from a review of the
e that diagnosed cases due to
gms are more rare than cases of

resia there is either absence or
e closure of a section or segment
of the duodenum. In *stenosis* there is either hypertrophy of the wall of the intestinal segment or of the mucous membrane, or both, resulting in blockage of the lumen. *Diaphragms*, which may occur in any portion of the duodenum, have been classified as: complete, incomplete, and the iris type. Structurally they are comparatively thin musculomembranous partitions.

DIAPHRAGMS

Histologically, diaphragms are of the same cellular pattern as the segment of intestine from which they have developed. They usually consist of mucous membrane and submucosa, with occasionally a few muscle fibers at the base.

These septums in the embryo, which remain as diaphragms, may be situated above or below the ampulla of Vater or in the inferior portion of the duodenum. Their completeness or incompleteness in conjunction with their intraluminal position, tending in some cases to an obstructive lesion, may precipitate early evidence of high obstruction; in other cases obstruction becomes manifest in later life. In fact, according to statistical data, many are found only at postmortem examinations, although the patients may have had a history suggestive of gastroduodenal disease, with no definite diagnoses having been made (cf. Nagel's patient, 72 years old). Those diaphragms which precipitate symptoms and signs of high obstruction do so early, either by their completeness or their incompleteness, while the third

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is for Fellowship in the International College of Surgeons.

RÉSUMÉ

Ostéochondroblastome primitif du métacarpe

Le malade, âgé de soixante-quinze ans, est montré. Des considerations pathologiques et cliniques sur les caracteristiques de ce type rare de néoplasme malin, rare généralement et rare dans ce cas particulier, de localisation sont avancées. On a discute et l'évolution clinique et le traitement. Pour établir le diagnostic, l'étude roentgenographique est utile. L'étude anatomopathologique ainsie que l'observation clinique nous renseignent sur la nature bénigne ou maligne du néoplasme. Il faut être prudent dans l'interpretation des phenomènes morphologiques. La chirurgie du cancer demande l'exérèse. L'expérience et le jugement individual doivent préciser l'interprétation doctrinale.

ZUSAMMENFASSUNG

Primäres Osteochondroblastom der Mittelhand

Ein Fall von primärem Osteochondroblastom der Mittelhand bei einem 75 Jahre alten Mann wird vorgestellt. Pathologische und klinische Erwägungen werden gemacht über die Entwickelung und die Eigenheiten dieser Art von bösartigen Tumoren, welche im allgemeinen, wie auch was die Lokalisation dieses Sonderfalles betrifft, aüsserst selten sind. Die Krankengeschichte und die Behandlung in diesem Falle, über welche diskutiert wird, werden erörtert. Folgende Schlüsse, die kommentiert werden leiten sich daraus her: Die Nützlichkeit der Röntgen-Untersuchung zur Diagnosenstellung. Die Wichtigkeit anatomisch pathologischer Studien zur Feststellung der Gutartigkeit oder Bösartigkeit des Tumors; die Verschiedenheit des klinischen Bildes, abhängig von der Gut- oder Bösartigkeit des Tumors; Vorsicht in der Auslegung morphologischer Bilder Klassischer Merkmale für die Bösartigkeit eines Tumors in der Chirurgie des Krebses die die vollständige Ausrottung zum Ziel hat, muss Erfahrung und persönliches Urteil die schulmässige Auslegung erhalten.

SUMARIO

Se da a conocer un caso de osteocondroblastoma metacarpal primitivo, en un viejo de 75 años de edad; se hacen consideraciones patológicas y clínicas sobre las características y evolución de este tipo de neoplasma maligno, raro por su frecuencia en lo general y por la localización del caso en particular; se relata la historia clínica y la conducta terapéutica seguida, a cual se discute; se hacen comentarios, derivando conclusiones, a saber: utilidad del estudio roentgenográfico para establecer el diagnóstico; importancia del estudio anatomopatológico para establecer la benignidad o la malignidad del tumor; divergencias existentes en los caracteres clínicos con respecto a la benignidad o la malignidad del tumor; cautela en la interpretación de los fenómenos morfológicos, indicios clásicos de la malignidad del tumor; basándose la cirugía del cáncer en la exéresis amplia, la experiencia y el criterio personal deben establecer la interpretación doctrinal.

RIASSUNTO

Osteocondroma primitivo del metacarpo

Un caso d'osteocondroma primitivo del metacarpo in un uomo di 75 anni viene riportato. Considerazioni patologiche e cliniche sulle caratteristiche di questo tumore maligno generalmente raro, e specialmente raro in questo caso di localizzazione, sono discusse.

neuropsychologic constitution of the individual. With such a thought in the background, those dealing with the problems as related to infancy and early childhood should avoid the pitfalls of empiricism. Early diagnosis will mean avoidance of delay, which, in cases of obstruction, is costly.

In cases of congenital obstruction, the following must be given consideration:

1. Congenital malformations of the upper gastro-intestinal tract, both intraluminal and extraluminal. In the first group of intraluminal malformations belong atresia, stenosis and diaphragms. Intraluminal new growths and, likewise, intussusceptions must be considered Extraluminal conditions include incomplete rotations, herniation at the fossa of Treitz, duodenal compression by the superior mesenteric artery and vein, and adhesions due to peritonitis, prenatal and postnatal.
2. Retroperitoneal neoplasms and neoplasms of the kidney or pancreas.
3. Inflammatory lesions within the duodenum, such as duodenitis and ulcer.
4. Imbalance of the vegetative neuromechanism

Many basic normal values or deviations from the normal values may be determined by complete laboratory examination. The author believes that such records are of value, if and when obtained, in rationalizing complications. Blood chemistry, chlorides, phosphates, calcium and the blood and urine diastase tests may yield information of value.

In making the diagnosis one should, then, consider not only the primary lesion but also those factors which aid in estimating the patient's chances for recovery.

Complications. Although one may exert every effort and use every facility to estimate the patient's condition, too often troublesome and sometimes fatal complications occur. They are undeterminable by the clinical laboratory aids now at one's disposal and are unpredictable However, all complications are due to perverted or inhibited physiologic functions, as a result either of inherited or congenital conditions or of acquired conditions. In any case, trauma, inflammatory processes of either the infectious or noninfectious types, and new growths—benign or malignant—are to be considered as etiologic factors.

CASE REPORT

R. A. B., a girl aged 12 months, born of Russian parentage, was admitted to the surgical service August 20, 1938. The diagnosis on admission was "upset stomach." The physician admitting her considered the case a problem of feeding and malnutrition. She was a breast-fed infant. At the time of admission she weighed 12 pounds and 4½ ounces (5,571.49 Gm.); length, 26 inches (66.04 cm.).

Family History. The child was born into a typical peasant family, the last of a series of 12 in order of birth. Five sisters and five brothers were living and apparently well. One brother had been born with a cleft palate and harelip. One pregnancy had terminated at seven months with a dead fetus. The family, from a psychologic and sociologic study, was below average. There was a tendency to inebriacy in both parents.

Present and Past Illnesses. The mother stated that the child had been a problem since birth and that during her lying-in period she had mentioned to the attending physician that the infant seemed to vomit too much at one time and too often. At home the baby did not gain in weight and had recurrent attacks of vomiting both of the ordinary spilling type and the projectile type. The amounts vomited were always of large volume. This vomitus was at times clear but bile stained and at intervals had the appearance of "pea soup." The stools had varied in color from very light yellow to putty or clay colored. The mother could not recall any other diseases common to infancy.

Physical Examination The child gave one the impression of premature ageing The skin was fair but of poor turgor. The fairness of the skin was accentuated by dark brown eyes and very fine auburn hair Her facial expression was anxious as though appealing for help. Her cry, shrill and reedlike, gave one the impression of pain and discomfort Although the general muscle tone was poor, she had sufficient strength to raise herself to a standing position, with the crib rail as support. When lying down she was usually found in the prone position, which seemed to [illegible] her considerable comfort and [illegible]

Head: This was norm [illegible]
The anterior fontanel [illegible]

the state of malnutrition, the head appeared large. The nasopharyngeal structures, eyes and ears were normal. Eruption of the teeth had been uneventful, and the gums were normal.

Neck: This was scrawny; no glandular enlargements and no abnormal pulsations were noted.

Thorax: The contour was normal, with a slight rachitic rosary. Heart and lungs were normal.

Abdomen: This was "pot-bellied." The distention was predominantly and at all times in the upper quadrants. Repeatedly a peristaltic wave was observed, which began in the left upper quadrant, and progressed downward and inward toward the umbilicus, at which point it was deflected upward and outward, stopping at the right hypochondrium. No definite masses could at any time be palpated, nor did the child register pain or discomfort during such examination; on the contrary, the manipulation seemed to have a soothing effect. No auscultatory examination was done, which was an oversight on my part.

Extremities: Except for loss of subcutaneous fat, poor muscle tone, and poor turgor of the skin, examination gave negative results.

Neurologic Examination: This was also negative.

Laboratory Reports. A study of the case record prior to September 13 indicated that little or no work of value had been accomplished other than one blood count, which indicated a secondary or nutritional anemia. In order to orientate himself, the author submitted the child to a therapeutic test with atropine sulfate solution, 1:1000 (0.1 Gm. in 100 cc.), one drop four times a day. Under this therapy the vomiting was controlled for two days, after which it again became an annoying problem. One cannot state that the medication in any way influenced the vomiting. On September 15, having completed the preliminary history, physical examination and observations, including the test to rule out pylorospasm, the author felt justified in recording the following impressions: (1) *congenital obstruction of the duodenum,* (2) *duodenitis,* (3) *duodenal ulcer.* The following measures were resorted to:

Gastric drainage yielded 400 cc. of fluid. Normally in children the volume is about 80 to 110 cc. Analysis of the contents showed 400 cc. of green fluid, with a total acidity of 36 per cent. The free hydrochloric acid was 13 per cent and the combined acidity 23 per cent. There was a trace of bile. The blood chemistry was negative. The blood count indicated a slight increase in red blood cells but not sufficient to warrant the opinion that there was any improvement in the nutritional anemia. The x-ray findings showed an *incomplete congenital duodenal obstruction.*

Diagnosis. The following impressions seemed admissible: (1) Dilatation of the stomach was present, resulting in a residual volume content three times that which one finds in a normal child's stomach at the age of 12 months; (2) repeated and excessively large volumes of vomited fluid were tending to dehydrate the child, there being a constant drain on the sodium and chloride ions; (3) as in all persistent high obstructions, such continued loss would tend to precipitate alkalosis and possibly also tetany; (4) the obstructing lesion was below the ampulla of Vater, since the stool usually contained little, if any, of the bile pigments and salts, and the vomitus always was bile stained in appreciable visual amounts; (5) tentatively the author considered the obstructive lesion to be in the descending or the transverse portion of the duodenum, below the ampulla of Vater. The fact that such lesions at the fossa of Treitz may also occur was kept in mind; also, the possibility of an incomplete rotation of the gastro-intestinal tract was considered.

The consulting gastro-enterologist stated: "From the history and the clinical and roentgenographic findings, this patient appears to have a benign obstructing process of the duodenum. It is apparently not amenable to medical treatment, and such being the case, surgery is the only alternative. The child's condition is as good as possible with the lesion present."

The dietary regimen was as follows. Small quantities of semisoft foods were alternated hourly with small volumes of milk and cream. The soft diet formula was rich in the essential vitamins. I felt that in order to prepare this child properly for surgical intervention such a regimen, comparable to the one used for patients with ulcer, was most likely to yield the best results, with omission, of course, of the alkalis. The infant was kept on this regimen from September 15 until the day of intervention. Her condition was retrograde.

Operative Procedure and Pathologic Findings. Under drop-method ether anesthesia, the abdomen was explored on September 21. The total operating time was 1 hour and 15 minutes. An upper right incision was made, exposing the abdominal contents. The stomach and the duodenum were found to be greatly distended with gas, and in the duodenal portion there was still considerable fluid, although pre-operative aspiration had been done. Th pylorus was markedly distended, so that the combined distention

dividual demonstration of signs and symptoms, the perception of which is purely subjective, i. e., the clinical difficulties due to the impossibility of having adequate patients at one's disposal at a given moment; and the dangers to which those patients are exposed when repeated explorations are made, particularly in the case of numerous groups of students. Utilization of the cadaver is advocated as an auxiliary to the teaching of this particular branch of clinical surgery. This method would preclude certain dangers to the living subject inherent in the demonstration of certain physical signs, such as crepitation of fractured bones, pateller impact, etc. A plan is proposed for teaching this branch of clinical work, the practical usefulness of which has been sufficiently demonstrated by the author in his course on surgical propedeutics at the University of Mexico School of Medicine.

DISCUSSION

Dr. André Crotti, Columbus, Ohio: I believe there is a lack of accurate knowledge of anatomy, and this paper falls well into the line of endeavor of the International College of Surgeons, which is not only to get together men of prominence all over the world but especially to center its attention on the younger generation of surgeons. This is the reason for the establishment by the College of surgical guilds or groups, and it is the desire of the College to have the younger generation of surgeons secure the necessary knowledge, in one line or another, which certainly is the fundamental principle of surgery. No one can be a great surgeon without also being an anatomist. Consequently, this paper is indeed timely.

Dr. Francisco Castillo Nájera, Ambassador from Mexico, stressed the necessity of anatomic teaching to younger men and its importance in medicine.

Dr. André Crotti, Columbus, Ohio: We have here today a man who has been largely instrumental in imparting to the International College of Surgeons the idea of surgical groups or guilds. The College owes him credit for the primary idea, because he started the formation of those surgical guilds in his own state. I have in mind Dr. Jepson, of Iowa.

Dr. William Jepson, Sioux City, Iowa: My name has just been referred to as one having imparted to the College the thought that men, in preparing themselves to render service more efficiently to their patients, could best do so by observing one another's work, and criticizing it. If it is poor, it should be so recognized and the individual told of it; if good, it should be complimented.

Some of those present may not realize what one of these guilds may be like when functioning for some time. It was my privilege, nearly thirteen years ago, associated with another physician, to select from the surgeons of our state some 35 members. I was fairly well acquainted with the surgeons of the state, and we formed a clinical society, which was to meet at least twice a year and observe the operative work of the surgeons located in the city where we happened to be meeting. We soon came to realize, first, that the number that could be well entertained and properly looked after in a group of that kind could not exceed 50, and, second, that they must be men possessed of a certain amount of clinical knowledge. We have never been short of having that full number of 50 men. In fact, we have a large waiting list, and at this time we have 32 of the members who met with us on the first occasion.

As to the value of the cadaver in surgical teaching, it has been my privilege, in past years, to be related to the teaching of surgery, and during that time the plan was used, although not sufficiently. I doubt if any surgeon can ever become too well acquainted with the anatomy of the human body; and unless we are acquainted with it we can hardly hope to render the efficient surgical service that we should.

One can learn how to make an incision in the abdomen and remove the appendix, and a few similar operations, but that is not surgery, in my opinion. The person who does that is just a special technician, and if he finds cancer in a portion of the colon, or a tumor, or some other condition, he may not recognize it. A physician who had been for some years an assistant demonstrator of anatomy was consulted by a woman for removal of a large abdominal tumor. He mistook the condition for unilocular ovarian cyst, and although he said he had never operated on an ovarian cyst and never done an abdominal operation, he undertook to operate. When the tumor was exposed it was revealed that the patient was in the eighth and one-half month of pregnancy. The one thing left to do was to remove the uterus. Had he ever seen that done before? No! What saved him was the fact that he knew where the ovarian artery was, and he knew how to tie it, which he did. He knew how to use a Thomas clamp and how to sew up the

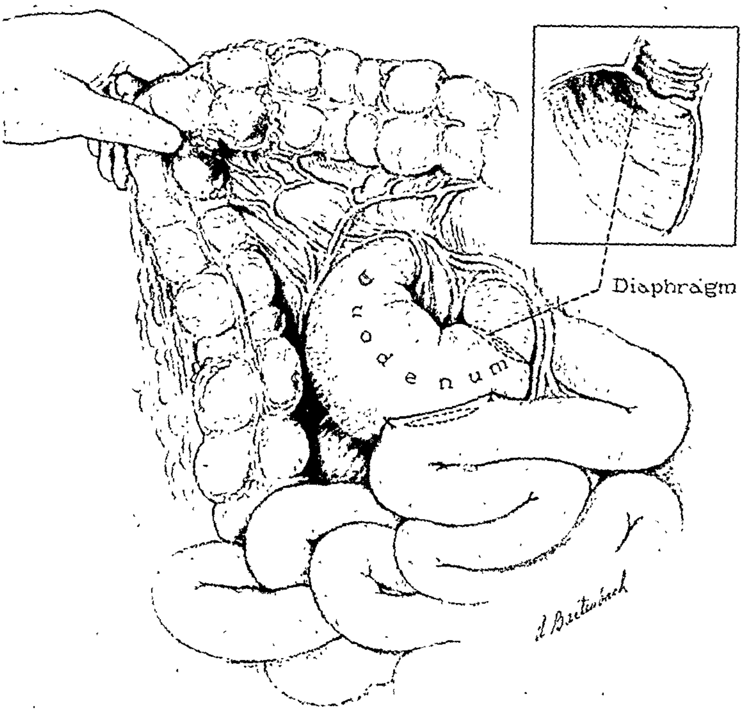

Fig. 3 Drawing showing retroperitoneal portion of the duodenum and jejunal loop with stoma The insert shows the completed anastomosis.

were freely movable A segment of the jejunum was brought over to the site of the exposed duodenum, and an anastomosis with silk was completed. The appendix was visualized and found normal. The abdominal wound was closed in layers, one cigaret drain being left in place

Postoperative Course Immediate recovery from the anesthesia was satisfactory, but about 2:30 P. M. the rectal temperature rose to 107° F., the pulse rate could not be counted at the wrist: this was accompanied by a convulsion Calcium gluconate and parathyroid hormone were given intramuscularly and seemed to exert a beneficial effect. No further convulsions occurred Subcutaneous fluids were forced and shock treatment instituted, but progress was poor, and the child died at 5 P. M Regrettably, no autopsy could be obtained.

COMMENT

The mechanics in the case reported here seem to be as follows: With the fixed portion of the duodenum proximal to the diaphragm greatly distended, and the segment distal to it in a state of normal tone, the weight of the mesenteric root and its vessels acted in such a manner as to prevent the aperture between the two from tending *to enlarge* from the distention, but *it remained* fixed or even became *smaller. It is*

ung individueller Demonstrationen der Symptome und Anzeichen, deren Erkenntnis eine rein subjective Angelegenheit ist, die klinischen Schwierigkeiten die Unmöglichkeit eine ausreichende Zahl von Patienten zur Verfügung zu haben, die Gefahren denen die Patienten ausgesetzt sind besonders bei wiederholten Untersuchungen in Fällen wo zahlreiche Gruppen von Studenten teilnehmen. Der Gebrauch der Leiche ist gerechtfertigt als ein Hilfsmittel im Unterricht dieses besonderen Zweiges der Klinischen Chirurgie. Diese Methode wurde ausschliessen manche Gefarmomente denen ein lebendes Objekt unvermeidlich ausgesetzt wird während Demonstration mancher physikalischen Symptome, wie Krepitation bei Beinfrakturen, Keilfrakturen der Patella u. s. w. Ein Plan wird vorgeschlagen für den Unterricht dieses Zweiges der Klinischen Arbeit, dessen praktischer Wert ausreichend vom Verfasser in seinem Kurs der chirurgischen Propedeutik an der Universität der Mexico School of Medicine demonstriert wurde.

SUMARIO

Utilidad Didáctica del Cadaver en Propedeutica Quirurgica

Se consideran las dificultades inherentes a la enseñanza de la propedéutica quirúrgica, respecto a la demostración individual de signos o síntomas, cuya percepción es enteramente personal: dificultades de orden clínico, debidas a la imposibilidad de disponer en un momento dado de enfermos adecuados; peligros a que se expone a dichos enfermos en las exploraciones repetidas, con mayor motivo si se trata de grupos escolares numerosos. Se preconiza la utilización del cadáver como auxiliar en la enseñanza de esta clínica, eliminándose el peligro que para el vivo presenta la demostración de ciertos signos físicos: crepitación ósea, choque rotuleano, etc. Se formula a continuación un plan didáctico de esta clase de trabajo clínico, cuya utilidad pedagógica ya ha sido demostrada por el Autor en la cátedra respectiva, que es a su cargo en la Facultad de Medicina de México.

RIASSUNTO

Utilita didattica del cadavere nella propedeutica chirurgica

La difficoltà dell'inseguamento della propedeutica chirurgica, in riguardo alla dimostrazione individuale di segni e sintomi la cui percezione è puramente soggettiva; la difficoltà d'ordine clinico di avere, al momento opportuno, i malati necessari; e i pericoli a cui questi pazienti sono soggetti, dopo ripetuti esami, specialmente con numerosi gruppi di studenti, sono discussi dall'autore.

L'utilizazzione del cadavere, come ausiliario all'inseguamento di questa particolare branca di chirurgia clinica, viene raccomandata. Questa metodo escluderebbe quei pericoli per il soggetto vivente, che sono inerenti alla dimostrazione di certi segui fisici, come per esempio la crepitazione di ossa fratturate, l'impatto patellare, ecc., ecc.

Un programma è proposto per l'insegnamento di questa branca clinica, la cui utilità pratica è stata sufficientemente dimostrata dall'autore nel suo corso di propedeutica alla Facolta Medica dell'Università del Mexico.

THESES FOR CANDIDATURE FOR FELLOWSHIP SHOULD BE ADDRESSED TO THE CHAIRMAN OF THE COUNCIL OF EXAMINERS OF THE INTERNATIONAL COLLEGE OF SURGEONS, 705-711, K. OF P. BUILDING, INDIANAPOLIS, IND.

might have thrown more light on the condition. The diastase tests especially would have been of value, since the mechanics of the distended duodenum tended to alter the tonicity of the sphincter of the common biliary-pancreatic ampulla (papilla duodeni major), the ampulla of Vater and also the sphincter of the accessory pancreatic duct (papilla duodeni minor), so that the possibility of a reflux of the gastroduodenal contents into the pancreas is not to be ignored. Such abnormal contents, I believe, would tend to change the normal pancreatic function by setting up a low grade pancreatitis.

Effect of Atropine. A complication which has been observed prior to surgery in several cases of high obstruction concerns the use of atropine. In each of the four recent cases observed (the one under my care and three called to my attention by a colleague), the use of atropine sulfate solution 1:1000 (0.1 Gm. in 100 cc.) has resulted in a marked rise in temperature. I believe that with the ablation of the vagus nerves and the vagus nucleus, with increase in the esterase content and inhibition of the production of the choline bodies or substances there is an immediate overactivity of the sympathetic nervous system, probably with the overproduction of bodies or substances referred to as sympathins, which is also due to the overactivity of the center of the sympathetic system in the hypothalamus. Temperature increase is the result, with an accompanying increase in the metabolic processes, which, in my opinion, is not helpful in these cases, which show poor nutritional balance and a state of potential, if not marked, dehydration resulting from continuous vomiting or excessive vomiting over a prolonged period of time. I believe that further dehydration results from the use of the drug, since with a temperature increase there is marked increase in perspiration, with a decrease in the renal output, and that such dehydration increases the danger of precipitating an alkalosis and its more serious sequela, tetany. Even though one attempts to avoid these disagreeable complications by supplying the dehydrated patient with fluids by the several accepted methods, the results are not always successful. This complication may be considered pharmacologic. I found no reference to it in the literature at my disposal. Some works mention that this drug tends to cause a rise in temperature, but no explanation is offered for the phenomenon.

Shock. In this case and in two others of high obstruction, all in a state of partial dehydration and poor nutritional balance and therefore possibly with a low or labile serum protein level due to prolonged vomiting, profound shock with severe convulsions resulted in from four to six hours postoperatively. This syndrome appeared, although attempts were made to replenish fluid loss immediately after operation. Comment is herewith made on the possible etiologic factors which enter into these complications, and certain suggestions are made for postoperative care which might tend to prevent these complications. In fact, certain measures have been found reasonably beneficial and if instituted early might be life saving.

Surgical shock, as one now understands its production, is the overstimulation of the sympathetico-adrenal system by and through the sensory nerve impulses. This presumably results in a vasoconstriction of the arterioles of the splanchnic and cutaneous areas, with a concomitant vasodilatation of the vessels of the skeletal muscles. Obviously in a dehydrated person this is a very undesirable reaction, since it tends further to remove from the circulation the essential plasma with its contained serum protein and the soluble salts of calcium, sodium, potassium and magnesium, and also those of the soluble phospl [illegible] in type or even the second type with sufficient aperture evokes symptomatology of less serious magnitude, unless occluded by a definite ingested mass, a bolus of food composed of roughage, for example, which cannot pass through the aperture, thus inducing a mechanical obstruction. It is in the incomplete type, in which the aperture is relatively small, that the greatest difficulty is experienced in reaching a diagnosis, without any regard to its intraluminal position. From a survey of the literature, the iris type of diaphragm seems to be the least dangerous. This type is usually not diagnosed and may be found during exploration of the gastro-intestinal tract or only at autopsy.

Anatomic and Physiological Features. Obstruction by a diaphragm with an aperture insufficient in size to permit even rapidly ingested fluids from passing through the aperture with a sufficient rate of flow to prevent the overaccumulation or flooding of the proximal side of the intestine may be compared to the pouring of fluid into a funnel with a small outlet.

A review of the salient anatomical features of the duodenum, which play a definite part in the mechanics of the obstruction and the distention, is necessary. With the exception of the superior portion of the duodenum and the duodenojejunal flexure, the duodenum is retroperitoneal and fixed to the posterior abdominal wall without a mesentery. It is roughly a horseshoe-shaped structure, with its concavity to the left, housing the head of the pancreas. Its convexity is to the right and comes in close proximity to the right lobe of the liver above and anteriorly, and to the right kidney. At about the middle of the descending portion it is crossed by the transverse mesocolon, and in the region of the left half of the inferior horizontal portion it rests on the abdominal aorta, the vena cava inferior and the vertebral bodies. It is crossed anteriorly by the mesenteric root and its contained superior mesenteric vessels. It is between this root and the abdominal aorta that the ascending portion begins. Unlike either the stomach or the small intestines, distending forces can displace it only in those directions offering the least resistance; retroperitoneally, this would be limited to the ability of the distention to exert force against the peritoneum, the mesenteric root, and the inferior portion of the pancreatic head; the descending portion meets resistance from the pancreas on the left and the kidney and liver on the right, with the peritoneal reflection, as in the case of the inferior portion, almost completely covering it and binding it to the posterior wall. It is only the superior portion and its flexure which are reasonably mobile, so that distending forces, whether gaseous or liquid, may and can exert themselves in all directions, and always along the line of least resistance.

The abnormal anatomic condition initiates a picture of abnormal physiology, which expresses itself in recurrent attacks of copious vomiting, the vomitus, depending on the site of the obstructing diaphragm, being occasionally or persistently bile stained. The clinical picture of malnutrition is present also. The normal peristalsis may show definite reversal, suggesting a peristaltic cutaneous wave propelled forward, meeting resistance, and causing a reverse peristalsis. This is a manifestation of high intestinal obstruction.

Differential Diagnosis. Despite the increasing tendency towards specialization, pediatrics is the province of the physician. It is during the period of what one likes to term obstetric pediatrics that intelligent diagnosis and treatment are of the utmost importance. It is my belief that anthropometric characteristics of the newborn, unless grossly deviated from the normal, only vaguely or not at all reflect the physiologic and to replenish the loss. The excessive sweating which occurs hinders the purpose and decreases the value of the fluids given in that salts and water are lost, but the static fluid within the tissues, as before mentioned, is not appreciably influenced. The result seems to be that within a few hours a state of delayed or secondary shock is more forcibly precipitated. This is true in the type of cases under consideration, in which dehydration accompanied by nutritional imbalance is present. It would seem more logical, physiologically, if the postoperative treatment of patients such as these were carried out in a room of moderately elevated temperature and only the lightest of bedclothes used. Fluid replenishment then, if given slowly, will have beneficial effect, and at the same time effort should be made to support the circulatory system by overcoming the excessive stimulation of the sympathetico-adrenal system.

4. High obstruction, by its tendency to dehydrate and place the patient in a poor state of nutrition, makes him a poor surgical risk. Although this is an accepted fact, it seems to be too often ignored pre-operatively and postoperatively. In spite of the very splendid contribution to the subject by Stenson, it seems logical to assume that, for purposes of alimentation, some avenue should be found for introducing the necessary fluids into the system outside of parenteral medication. Further studies in this direction may throw some light on the problem.

Stenson, whose study of the literature on duodenal occlusion in the newborn revealed "several hundred reported cases in which there were only 15 recoveries," including his own case, considers enterostomy fatal in the newborn. Enterostomy may be impossible because of a narrowed lumen or contraction from disuse. He states that gastro-enterostomy, duodenojejunostomy, entero-enterostomy and ileocolostomy are better tolerated and are the safest procedures when they are strictly indicated. He points out the fact that a collapsed bowel may simulate the appearance of atresia. The presence of a lumen was not established in his case until a transduodenal band was cut and a kink in the intestine was straightened out, after which the seemingly atretic duodenum ballooned out with the passage of air. The operation, which was performed on a premature twin, soon after birth, had to be interrupted several times because of surgical shock. The wound was covered with a moist laparotomy pad and a couple of minutes were allowed. Such moments of respite, he believes, played an important role in the patient's recovery.

In any event, the critical condition of the patient is no contraindication to operation, as death would occur inevitably without such surgical intervention

5. In cases in which, due to prolonged vomiting, dehydration has produced a physiological imbalance bordering on an alkalosis, administration of carbon dioxide inhalations postoperatively is a valuable adjunct in preventing and combating tetany. It was demonstrated in one case that hyperventilation induced by the use of oxygen precipitated tetany which was controlled by giving inhalations of carbon dioxide. The carbon dioxide seemed to re-establish, even though transitorily, physiologic stability probably by temporary reversal of the hydrogen ion concentration from the alkaline phase to one within the neutral range and therefore more equitable to sustain the essential vital functions. This observation seems to be supported by accumulated data in the literature.

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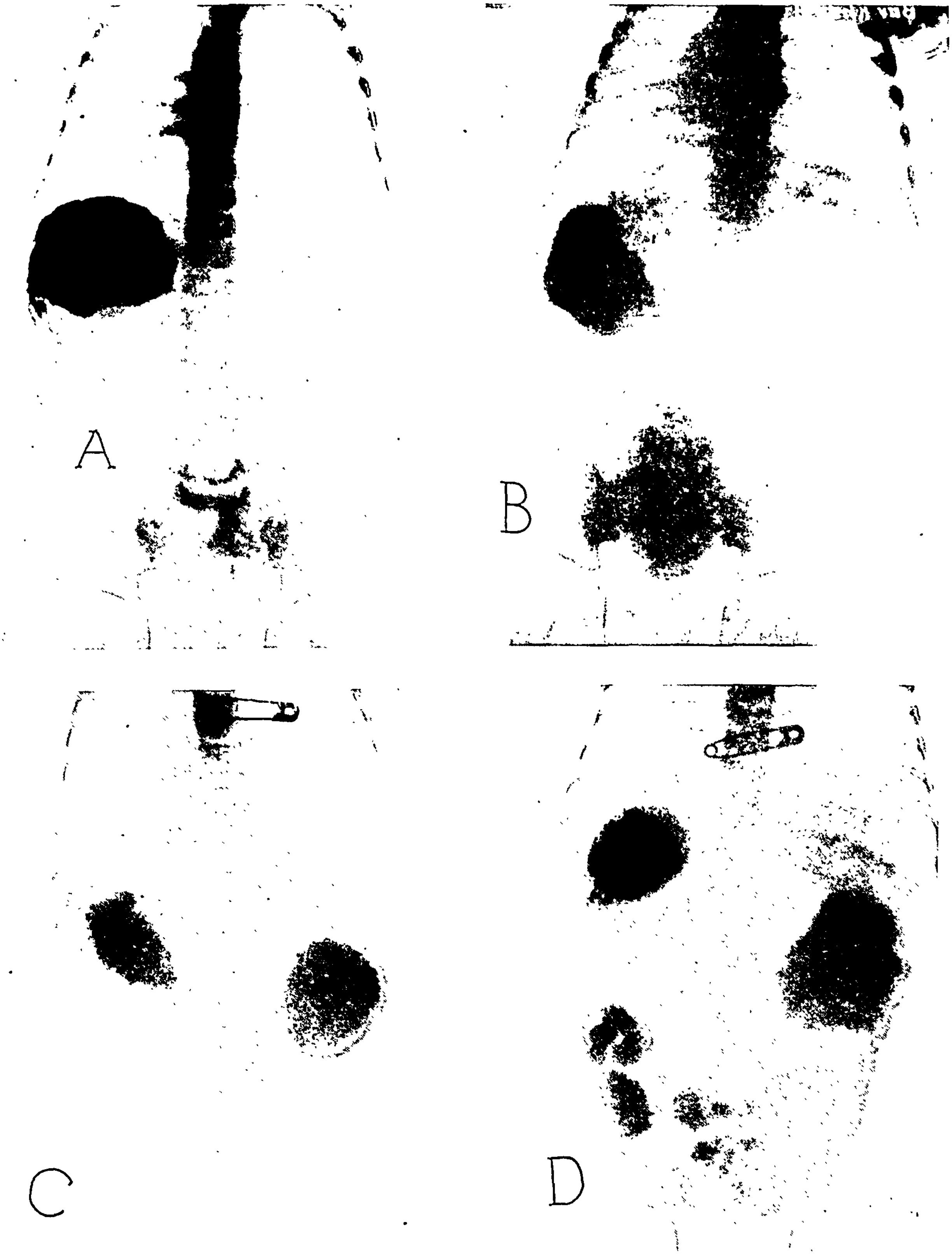

Fig. 1. Roentgenograms showing congenital duodenal obstruction. *A*, immediately after barium meal. *B*, one hour after barium meal. *C*, five hours after barium meal. *D*, six hours after barium meal.

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ZUSAMMENFASSUNG

Unvollständiges Duodenal Septum als Ursache von Darmverschluss

1. Fälle von angeborenem Dünndarmverschlufs, wovon der hier beschriebene Fall einen Typus darstellt, dürfen nicht länger für chirurgische Seltsamkeiten mit schlechter Prognose angesehen werden.

2. Die Litteratur bestärkt die Ansicht, dass empirisches therapeutisches Handeln dazu angetan ist, aus einem geringen wagnis ein solches von physiologischer Anbeständigkeit zu machen, und dass, obleich chirurgischer Eingriff eine gute Chance für die Patienten bietet, Kinder meistens mit physiologish schlechten Chancen zur Operation kommen, wegen der verspateten Diagnose.

3. Dieser Fall stellt einen solchen versager wegen einer verspäteten Diagnose dar. Die Symptome waren gedeudet worden als Folge einer der üblichen Ursachen für Erbrechen.

RESUMÉ

Obstruction intestinale due à un diaphragme duodénal incomplet

1. Les obstructions intestinales de l'intestin grêle ne sont plus considerées comme des raretés chirurgicales qui doivent être envisagées d'un point de vue pessimiste.

2. Quoique que la chirurgie n'entraîne aucun péril pour le malade, les malades ne sont addressés au chirurgien que dans un état désavantaguex vu le retard du diagnostic.

3. Le cas rapporté est un exemple des insucces dû à un diagnostic retardé, les symptômes ayant été interprétés comme dus à une des causes ordinaires de vomissements.

SUMARIO

Diafragma Duodenal Incompleto como Causa de Obstrucción Intestinal

1. Obstrucción congénita del intestino menor, del cual el caso reportado aquí representa un tipo, no son mas consideraros como rarezas quirúrgicas y tratados con pesimismo.

2. La literatura confirma la opinion que la terapéutica empírica tiende á transformar un caso de poco riesgo á uno de inestabilidad fisiológica, y que aunque cirugía ha sido hecha sin riesgo para el enfermo, los niños vienen á cirugía como riesgos muy pobres, debido al diagnóstico demorado.

3. Este caso representa uno de los fracasos resultando de la demora en el diagnóstico, los síntomas fueron interpretados como los corres[illegible] causa mas comun de v[illegible]

the stretched but still constricting pylorus, at the first observation, gave one the impression of an hour-glass stomach. After careful exploration, especially in the region of the fossa of Treitz, and also in that of the superior mesenteric vessels, at which regions no additional pathologic changes were noted, it was decided to explore the descending and transverse portions of the duodenum. With the exception of a few fragile adhesions in the region of the first portion of the duodenum and gallbladder and with the exception of the stretched pylorus and the postpyloric distended duodenum, nothing specific was found. A small incision was made into the duodenum, through which gas and thin greenish fluid welled, deflating the stomach and emptying the duodenum of its contents. The gross deformity of the stomach and the duodenum no doubt prevented the tube from reaching fluid contained in the dilated and distended duodenum. The marked distention of the stomach, even though pre-operative aspiration had been accomplished with good return of fluid, may readily be considered as being due to aerophagia during the early stages of anesthesia. The duodenum having been opened, a finger was introduced in its lumen and exploration carried on, until an intralumenal obstructing region was found in the transverse portion, to the right of the vertebral bodies. The obstructing body seemed flexible and had a small aperture through which the tip of the exploring finger could be passed, but with a sense of resistance comparable to that which the finger meets in digital exploration of a small, circular-type, virginal hymen. Withdrawal of the finger gave one the impression or sensation of a circular constriction slipping off the finger tip. This exploration having been completed and confirmed by my assistant, I felt that the pathologic findings confirmed my pre-operative diagnosis of incomplete congenital duodenal obstruction. The surgical pathologic diagnosis was *incomplete congenital duodenal obstruction,* resulting from a diaphragm with small aperture.

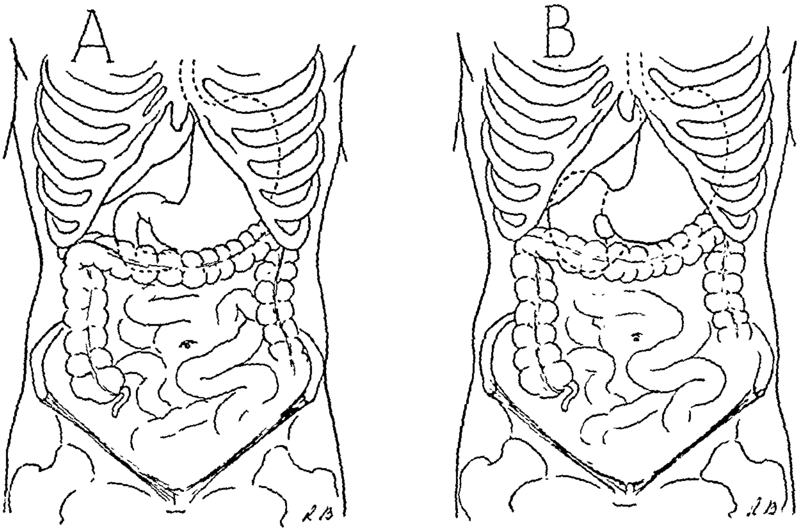

Fig. 2. *A,* schematic representation of the normal relationship of the stomach and duodenum. *B,* schematic representation of the acutely dilated stomach and the duodenum, with the pyloric ring, placed on an acute stretch so that the gastroduodenal distention gives the appearance of an hour-glass stomach. The usual sites for this congenital obstruction are either in the neighborhood of the papilla of Vater or at the duodenojejunal juncture. The former is twice as common as the latter. The obstruction in the author's case was at the duodenojujunal juncture.

A duodenojejunostomy was attempted as the corrective measure of choice. The hepatic flexure of the colon was grasped gently, and slight traction was exerted on the mesocolon, thus exposing the posterior peritoneum and the mesenteric root. With the finger as a guide in the lumen of the inferior portion of the duodenum, the tip touching the obstruction, an incision was made through an avascular portion, exposing the retroperitoneal duodenum, through which the incision was continued, the opening made being about 2 cm. long. No anomalous condition was found in the region of the mesenteric root, which was to the right of the incision, nor could the obstruction have been caused by the superior mesenteric artery and vein, which structures

INVOLUTION OF THE LESSER CURVATURE OF THE STOMACH

AS A COMPLICATION OF CHRONIC GASTRIC ULCER*

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IN regard to the roentgen picture of the stomach, the organic hour-glass shape is a well known feature. A rare complication of chronic gastric ulcer is an extensive shortening of the lesser curvature in the longitudinal direction. Characteristic of these cases is an abnormally short or spiral-shaped lesser curvature; the cardia and pylorus are near each other, the latter being drawn upward and to the left, and the ventricular angle has disappeared. The greater curvature usually forms a large pouch. This type of stomach is often called "tobacco-pouch stomach." The duodenum is also involved in the ulcerative process. The extreme cases are called in the literature "fistula or pseudofistula gastroduodenalis." This term does not exactly express the pathologico-anatomic changes.

In the following section one case is reported, in which the stomach could be examined also by autopsy.

REPORT OF CASE

History A man aged 71 was admitted to the hospital in February 1936 with the clinical diagnosis of myodegeneratio cordis, ulcus ventriculi and hypertrophia prostatae. Already at the age of 24 the patient sometimes had pain in the stomach immediately after meals and after eating sour food in general, also after physical exertion There were long periods without such pain The stools were usually solid, sometimes of tarry appearance Once, at the age of 64, vomiting of blood occurred During the last years there were symptoms of cardiac failure and difficult micturition.

The patient had always been thin and at the time of admission was emaciated and acrocyanotic. The heart was enlarged, and the sounds were dull. The blood pressure was 162/80 mm. of mercury. Pulmonary edema was present, and the liver was slightly enlarged. The prostate was enlarged, but there was no pain on palpation. The urine contained colon bacilli. The feces were normal. The red cell sedimentation rate was 22 mm. per hour. At the time of admission there were no symptoms of disturbance of the digestive tract. Gastric analysis after a test meal showed 30 cc. of poorly digested contents, a congo red reaction and an alkaline reaction.

Digitalis was given, whereupon the symptoms from the circulatory apparatus disappeared and the blood pressure decreased to 140/80 mm.

At Christmas of 1937 the patient complained of stomach trouble, consisting of attacks of pain, especially after ingestion of solid food The food seemed to "come to a stop near the umbilicus." The same symptoms had occurred previously, but were not so pronounced Gastric analysis showed an alkaline reaction for litmus

Roentgen Examination A large air bubble was seen in the stomach. The diaphragm seemed to be extended The barium meal passed the cardia without any obstruction filling up the stomach, which was small The distance between the cardia and the pylorus was about 2 cm The pylorus was drawn upward and could not be separately seen. Stenosis was probably present, as indicated by the large air bubble The duodenal cap was not visible. The shape of the stomach did not change in different positions, which was probably due to ad-quite within reason to assume that the contour of such an aperture is altered due to the distention above.

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* Read at the International Scientific Assembly of the International College of Surgeons, New York, May 22, 1939

The malformation of the duodenum here described set up a train of malfunctions in the physiologic processes of digestion and assimilation, such as reverse peristalsis, reflex vomiting, and dehydration, which influenced the physiologic activities of the endocrine-vegetative-nervous system and the *p*H of the tissues and body fluids essential to life. Inorganic and organic chemistry and the physiology of the body as a whole were affected.

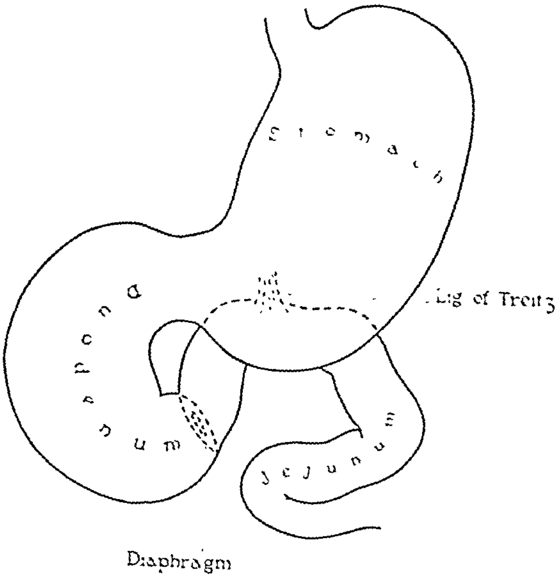

Fig. 4. Drawing showing the greatly distended stomach and superior portion of the duodenum.

COMPLICATIONS

The complications in the case here reported may be explained as follows:

1. The genesis of the anatomico-physiologic lesion was defective development of the duodenum.

2. The distention and the dilatation of the stomach and the duodenum, with the excess fluid and possibly also the irritating action of the partially digested and fermented food material, induced repeated attacks of vomiting.

3. The repeated attacks of vomiting tended to act in several ways: (a) Ingested food, except for a relatively small portion, rarely was completely digested and reabsorbed in the gastro-intestinal tract. (b) The repeated attacks of vomiting tended to keep the body in a state of dehydration. (c) The obstruction being high, the important basic constituents of the body fluids and tissues were being constantly lost, namely, the sodium ions, loss of which tends to rapid dehydration, and also the chloride ions, loss of which changes the *p*H of the body and tissue fluids, tending to expedite the onset of an alkalosis and tetany. With the chloride loss there is also a loss in the carbonic acid, both essential in the maintenance of the normal *p*H. (d) Thus in this case with almost constant fluid loss, comparable to prolonged duodenal drainage, with the second factor of incomplete digestion and poor assimilation of such food material as passed by the obstruction, the patient was in a state of partial dehydration, with a very labile *p*H and poor nutrition. Since relatively normal constancy of the *p*H is essential to all functions, such etiologic factors as aforementioned will necessarily upset such a balance and thereby tend to alter the intimacy of the relationship between the glands of internal secretion and the nervous system, in this case especially the vegetative nervous system, thereby increasing the danger of alkalosis and tetany.

4. Also, one may apparently assume that this child was deficient in her labile protein stores, first, because she at no time had an adequate intake of protein which completed the process of digestion and assimilation, owing to her repeated attacks of vomiting, such food elements as did pass by the obstruction not being sufficient to maintain a relatively stabile protein store; second, because over the period of a year no effort had been made in any of her treatments to sustain her nutrition, other than by the process of empiric therapeusis. Whether the obstruction is in an infant or an adult, it is obvious that, instead of physiologic stability, a potential physiologic lability is created. In these cases the balance is further altered by pharmacologic reactions and physiologic reactions due to such a drug as atropine and to surgical shock with pictures such as will be outlined.

The patient was not given the benefit of a complete laboratory work-up which ulcerative process in the lesser curvature. The ulcer penetrated into the wall of the stomach. Perigastritic processes developed, and as a consequence formation of numerous adhesions to other organs occurred. Gradually the layers of the lesser curvature had been replaced by scar tissue, cicatrization had taken place, and a spiral-shaped involution had resulted. A pyloric stenosis developed simultaneously. All the aforementioned processes seemed to have been of long duration. The achylia was evoked by the atrophic mucosa. Malignant degeneration seemed to have occurred recently, but the exact time could not be determined. The clinical, roentgenologic and pathologico-anatomic findings corresponded with each other.

REVIEW OF THE LITERATURE

The cases which in the literature are called "fistula or pseudofistula gastroduodenalis" can be regarded as rare internal fistulas. Previously they were met with only at autopsy. In most of the cases the etiologic factor is a chronic gastric ulcer. Among other extraventricular factors may be mentioned tumors, adhesions and contracture of the omentum and advanced lesions of the gall organs.

From the older literature some cases may be cited. Dittrich[4] described a case in which, owing to a chronic gastric ulcer, the lesser curvature adhered to the duodenum and a perforation ensued in the resulting wall. The pylorus, situated at the border of the new opening, was normal. Mohr (1842)[13] reported an almost similar case.

In a case described by Cruveilhier (1852)[8] the stomach had the shape of an hour-glass; in the lesser curvature an ulcer was found, 8 cm. in length, which communicated with the pouchlike enlargement of the distal part of the stomach and through this with the small intestine.

Rokitansky (1861)[16] mentioned that an abnormal opening between the stomach and the duodenum may occur in connection with a chronic gastric ulcer. Also in many cases an ulcer is found in the duodenum near the pylorus. This process may be associated with the ulcer in the stomach in front of the pancreas but behind the pylorus. This can give rise to a new communication, and the pylorus can be excluded. Rokitansky seemed to presume the occurrence of two ulcers, one in the stomach, the other in the duodenum near the pylorus. This fact should explain the scarcity of these cases.

Thierfelder (1868)[19] reported a case in a woman aged 46. As a condition for the development of this abnormal communication he mentioned the following: The lesser curvature usually forms an angle. In some patients this angle may be so small that both parts of the curvature come near to each other. When an ulcer ensues, the aforementioned small angle and the short space between the two parts of the curvature are circumstances favorable for an adhesion of these parts. When the ulcerous process with its accompanying changes develops further, a partition wall in the stomach may occur in a later phase. Perforation can take place in this wall between the corpus and the canalis, or, provided the duodenum is involved in the process, between this organ and the stomach. The fistula appears in an advanced stage. During the course of the disease a large part of the musculature is either weakened or destroyed, in consequence whereof the stomach lacks its normal peristalsis. The distal part of the stomach is pouchlike and enlarged, partly by reason of the circumstances just mentioned and partly owing to mechanical factors such as the weight of ingesta or to stenosis. Welch (1885)[2] wrote about this feature in two cases

It may be briefly said that almost all the authors suppose that the pathologic changes develop along the lines [illegible] described.

ionizable form. By such pooling or stagnation of the plasma, no doubt, one further changes the *p*H of the body fluids, which tends to cause an imbalance between the soluble and insoluble calcium ions, also, through the change in the *p*H, to interfere with the proper action of the parathyroid gland and its hormone. One may assume that with the *p*H in dehydrated individuals ranging toward the alkaline phase, the serum albumin will, since it has amphoteric properties, link itself more readily to the ionizable calcium and in this way alter the calcium concentration, so that tetany in these cases is readily precipitated. With the removal of the blood plasma, such dehydrated patients are quickly and, on occasion, dramatically thrown from a state of stability into one of lability with resulting alkalosis and tetany. In the case here reported and in one of stenosis, favorable results were obtained by the use of parathyroid hormone and calcium gluconate, supplemented by magnesium sulfate, injected intramuscularly at intervals. This therapy was dramatically effective in both cases in controlling and preventing further convulsive seizures. In the third case which I saw, the patient did reasonably well, but a very interesting fact was that, although the child ceased breathing, it was possible to resuscitate it with inhalations of carbon dioxide; however, as soon as oxygen was employed the child had convulsions, became cyanotic, and ceased breathing. This demonstrated very well the activating of tetany in a dehydrated patient by hyperventilation.*

This case also demonstrated another interesting fact. It was observed that with fluid intake restricted to water no convulsions occurred, but when mother's milk, although low in phosphate content, was substituted, convulsions were precipitated. It must be noted that this case was further complicated by a secondary wound infection, which caused a rise in temperature, a condition not at all desirable in a relatively normal case and certainly not in one instabile due to dehydration.

CONCLUSIONS

1. One often overlooks the physiologic instability of patients. Too often one is lulled into a false security by expectantly giving fluids by the several routes, forgetting that, in cases of high obstruction, the patient has been deprived of the essential products of digestion and the assimilation of these products in that portion of the small intestine distal to the site of the obstruction and its degree of occlusion influence the picture.

2. Shock presumably increases the permeability of the capillaries, tending thereby to encourage the leakage of plasma into the tissues of the viscera and muscle. The volume so removed from the general circulation is reasonably large and its diluent value is lost along with the neutralizing and stabilizing values of its contained solutes. Fluid and solutes so removed no longer play any part in vital function and especially in maintaining a stabilized hydrogen ion concentration essential to vital function. With such deviations from the normal, the intimacy of the relationship between the vegetative nervous system and the glands of internal secretion is thrown into a state of imbalance and tetany is more likely to occur.

3. One would do better not to dehydrate infants and children further by the routine treatment of excessive coverings and packs of hot water bottles, presumably with the idea of combating shock, even though fluid is being given

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*In discussing the treatment of the tetany syndrome in the newborn, Shannon has called attention to the precipitation of calcium salts at the site of local injections of calcium gluconate and also at points in the body remote from the site of injection In the cases reported by him reabsorption eventually occurred, apparently without damage, but further consideration must be given to the facts he has presented.

pouch appeared in the same place. The opaque meal passed directly from this pouch into the upper portion of the duodenum. Operation was not performed, but the patient remained under observation for two years, and the stomach was unchanged at four roentgen examinations.

Dyes (1934)[5] reported a case in which a niche was seen in the lesser curvature near the pylorus. Four years later the niche had disappeared and the pylorus was involved in the spiral-like rolling in of the curvature.

In the case of Frank (1938)[6] the patient had suffered from gastric disturbances since 1918. Five years later he had a hematemesis, and one year from this time a gastric ulcer was found. Hematemesis occurred again in 1928. At roentgen examination in 1930 a filling defect in the lesser curvature was seen, and carcinoma was suspected. The patient was examined again in 1934 and 1936; at the last examination the stomach had the shape usually found in cases of so-called gastroduodenal fistulas.

In most of the cases the history of the disease extended over many years. In the case reported by Lüdin[11] this time was thirty-eight years; Melchart[12] mentioned twenty-seven years and Frank[6] thirteen years, the period being forty-seven years in our case. Nothing can be said with certainty about the time elapsing from the beginning of the ulcerative process to the formation of the fistula. In some cases the development seems to take place in a short time. In the case reported by Hautefeille[8] the time was one year, after which the stomach remained unchanged for two years. According to Dyes,[5] the time was four years, and in Frank's[6] case it was thirteen years. Monroe[13] mentioned nine years, but his patient was operated on twice.

ETIOLOGY

Although the aforementioned extraventricular etiologic factors and in some cases a spastic contracture of the lesser curvature may be considered as the cause of the herein mentioned changes in the stomach, it is apparent that a chronic, mostly neglected gastric ulcer is the main cause of the disease. During the development of the process the lesser curvature slowly diminishes; the muscular layers are affected and finally destroyed and replaced by scar tissue. The ulcer itself, however, is not enlarged. Inflammatory processes may involve the serosa and later the omentum also. The latter and the ligamentum hepatoduodenale shorten gradually. In many cases adhesions to the liver and diaphragm ensue. Because of the shortening of the lesser curvature, the pylorus is drawn up toward the cardia, and the curvature at the same time becomes straighter. The canalis is directed upward and in some cases to the left. The whole stomach is situated to the left of the midline. The duodenal cap is also affected and drawn into the process, and in later phases it cannot be distinguished separately in the roentgen picture. The upper part of the duodenum is drawn toward the pylorus, and the arch in the first portion disappears. Owing to the formation of scar tissue in the different portions, these become rigid, and the normal peristalsis ceases. The primary ulcer may disappear or be deformed to such an extent that it is impossible to determine its position in a later phase. In some cases both portions of the lesser curvature are joined and form a partition wall in the stomachic picture. This wall may be the site of a later perforation.

The localization of the fistula and the extension of the processes vary, but usually the first portion of [illegible] um is the site of the [illegible] Hautefeille[8] mentioned [illegible] tion and Moiroud[14] t[illegible] longer considered surgical oddities to be considered with a pessimistic attitude.

2. Literature confirms the opinion that empiric therapeusis without a diagnosis tends to turn a fair risk into one of physiologic instability, and that although surgery has been made safe for patients, infants come to surgery physiologically as poor risks, due to delayed diagnosis.

3. This case represents one of the failures resulting from delayed diagnosis, the symptoms having been interpreted as due to one of the more common causes of vomiting.

For their valuable assistance and cooperation, I wish to thank Doctors F. Silvernale, Thomas Walker, and Charles Little.

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71 is described, in which the history extended over forty-seven years. The patient was operated on, but died Post mortem the stomach was seen to be small. Extensive scar tissue divided it into two parts. Macroscopically no tumor was visible. In a specimen from the lesser curvature malignant degeneration in some cells could be seen

Cases from the older literature and from the literature relating to roentgen findings are cited. The etiology is usually a chronic gastric ulcer Advanced cases of this type seem to be rare

We take pleasure in thanking Prof Dr H Bardy, Physician-in-Chief at the Maria Hospital, Helsinki, for his assistance Further thanks are due to Prof A. Wallgren for his help in examining the microscopic preparations and for giving us valuable advice.

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RÉSUMÉ

Involution de la petite courbure de l'estomac consécutif à un ulcère gastrique chronique

Le malade âgé de soixante-et-onze ans avait souffert de troubles gastriques pendant les dernières quarante-sept années. Il fut opéré, mais ne survécut pas à l'opération. A l'autopsie, on trouva un petit estomac divisé en deux compartiments par du tissu cicatriciel. Macroscopiquement, aucune tumeur n'était visible. Dans un specimen prélevé de la petite courbure, on constata de la dégénération maligne de quelques cellules.

L'auteur cite des cas recueilles dans la littérature. L'étiologie est généralement un ulcère gastrique chronique. Les cas avancés de cette nature sont peu fréquents.

ZUSAMMENFASSUNG

Involution der kleinen Curvatur des Magens als Komplikation eines chronischen Magengeschwürs

Ein Fall von Involution der kleinen Kurvatur des Magens bei einem 71 Jahre alten Mann wird beschrieben, bei dem das Leiden sich über einem Zeitraum von 47 Jahren erstreckt. Der Patient wurde operiert und starb. Die Autopsie ergab einen kleinen Magen. Ausgedehntes Narbengewebe teilte ihn in 2 Teile Makroskopisch war kein Tumor nachweisbar. In einem Schnitt der kleinen Curvatur konnte bösartige

RIASSUNTO

Ostruzione intestinale dovuta a diaframma duodenale incompleto

1. Le ostruzioni congenite dell'intestino tenue non sono più considerate come rarità chirurgiche; da trattarsi con un punto di vista pessimistico.

2. Sebbene la chirurgia non porta pericolo per il paziente, spesso il malato viene diretto al chirurgo, in uno stato disavvantaggioso, per una diagnosi protratta.

3. Il caso riportato è un esempio degli insuccessi dovuti a una diagnosi protratta, chè la sintomatologia del caso era stata interpretato come dovuta a cause ordinairie di vomito.

* * *

Plans for the establishment of the **American Museum of Health** were announced at dedication ceremonies held in the Hall of Man in the Medicine and Public Health Building at the New York World's Fair on June 17. The Carnegie Corporation, the Rockefeller Foundation, the Oberlaender Trust and the major life insurance companies have made possible the founding of the museum and acquisition of most of the displays at the Medicine and Public Health Building. These exhibits will be maintained and expanded in a permanent health teaching center in New York City at the end of the fair. At the formal exercises dedicating the museum, **Dr. Livingston Farrand,** President Emeritus of Cornell University, presided, and the speakers included **Mayor La Guardia; Grover A. Whalen,** President of the Fair, and **Drs. Edward S. Godfrey, Jr.,** Albany, state health commissioner; **John L. Rice,** City Health Commissioner; **Arthur W. Booth,** Elmira, N. Y., Chairman of the Board of Trustees of the American Medical Association; **George Baehr,** of the New York Academy of Medicine; **Abel Wolman,** Baltimore, President of the American Public Health Association; **Louis I. Dublin,** Chairman of the Executive Committee on Medicine and Public Health for the fair, and **Homer Calver,** secretary of the museum and director of the fair's health exhibit.

Dr. Oscar B. Nugent has just returned from a month's vacation and has resumed his work at the Chicago Ear, Eye, Nose & Throat Clinic.

* * *

Correction

Through an inadvertence, in reviewing the scientific exhibits of the International Assembly of the International College of Surgeons held in New York May 21-23, no mention was made of the excellent motion picture exhibited by Dr. Morris C. Lippman of New York City entitled, "Nasal Plastic of a Humped and Elongated Nose with Bulbous Tip." The instructive exhibit consisted of lantern slides, photographs and transparencies, casts and moulages, and instruments and accessories. This made a well rounded and intriguing display of material on plastic surgery of the face and facial features. Technic, anesthesia, and postoperative results were included.

* * *

Plans for the **National Assembly** of the United States Chapter of the International College of Surgeons, to be held at Venice, Florida, February 12 and 13, 1940, are progressing very swiftly and favorably.

* * *

NOTICE:—THOSE INTENDING TO PARTICIPATE IN THE SCIENTIFIC PROGRAM AT THE NATIONAL MEETING OF THE UNITED STATES CHAPTER OF THE INTERNATIONAL COLLEGE OF SURGEONS IN VENICE, FLORIDA, KINDLY COMMUNICATE PROMPTLY WITH DR. FREDERICK M. DOUGLASS, 421 MICHIGAN STREET, TOLEDO, OHIO, OR WITH DR. FRED H. ALBEE, 57 WEST 57TH STREET, NEW YORK CITY.

HORMONOTHERAPY IN MASTOSIS

PROF. DR. EDUARDO BELLO

LIMA, PERU

DURING the period of sexual activity or at the menopause certain benign changes in the mammary gland are prone to take place. These changes are in the nature of tumors, varying from simple indurations to cystic formations (degenerations) and are not malignant, although if left untreated they may progress to malignancy.

It was formerly my practice to remove these growths surgically, but recently I have learned to associate them with certain menstrual changes, for in all instances an accompanying imbalance of ovarian hormone secretion[1, 2, 3] has been observed. I first began the practical application of hormonotherapy in breast hyperplasias in 1936, employing it in the case of a patient who would not consent to operation.

CASE REPORT

This patient, aged 50, had had two normal pregnancies followed by two abortions, the last when 40 years of age. Her menses began diminishing at 44 and ceased at 48. Her ensuing menopause was decidedly tumultuous, being accompanied by headaches, palpitations and hot flashes. Six months before coming to me she first noticed a painful swelling in her left breast which was slowly increasing in size. Upon inspection this breast appeared somewhat enlarged, and upon palpation the upper border felt indurated and was tender to pressure. There was no discharge from the nipple, which was not retracted, and no axillary adenopathy was present. The right breast was of normal size and shape but careful palpation disclosed the presence of three small hard masses, all definitely encapsulated and freely movable.

Bearing in mind the fact that such hyperplasias often remain stationary or even undergo retrogression, I refrained from insisting upon surgical intervention. The changes in the right breast gave further reason for conservative treatment of the left one. However, it was decided to use hormonotherapy, since certain European clinics had reported excellent results from its use in such hyperplasias associated with functional ovarian disturbance. The patient was given ovarian extract orally and estrogenic hormone (Progynon) by intramuscular injection. She was advised to avoid pressure or traumatism of her breasts and to return at intervals for observation. Upon her first return, at the end of two weeks, the nodules had disappeared from her right breast while the swelling of the left breast had decreased to half its previous size. With continued treatment there remained at the end of two months little evidence of any induration, and at the end of eight months both breasts apparently were quite normal.

OTHER CASES

The foregoing history is typical of two succeeding cases, and the excellent results achieved inspired their presentation before the medical society of Lima in 1937.[4] Since then the number of patients has increased to twenty, of which four have not been considered because they discontinued treatment at the first sign of relief and were not seen again. In two cases the hyperplasia was complicated by an active inflammation of the overlying skin, but these patients, nevertheless, responded well to the treatment. Although this list of cases is not long, the uniformly good results prompt their reporting.

TREATMENT

The tumors treated had all the characteristics of benignity without nipple retraction, skin adhesions or axillary adenopathy. In most cases the opposite breast contained painful nodules which disappeared later under treatment. All the patients were in or near the menopause and it was assumed that they lacked estrogenic hormone. This hormone, therefore, was given, in the first hesions. The mucosal folds were low and small. The contour showed no defects which would indicate a tumor. There was no visible niche. Peristalsis was very weak and sluggish. Only small portions of the opaque meal trickled into the small intestine. After six hours most of the barium was in the stomach, and after twenty-four hours some residue remained. Elongation and adhesions of the colon sigmoideum were observed at the roentgen examination per rectum. The impression was shortening of the lesser curvature, as well as a spiral-shaped formation. The whole stomach was small. It was thught that the changes were probably due to a chronic gastric ulcer (fig. 1).

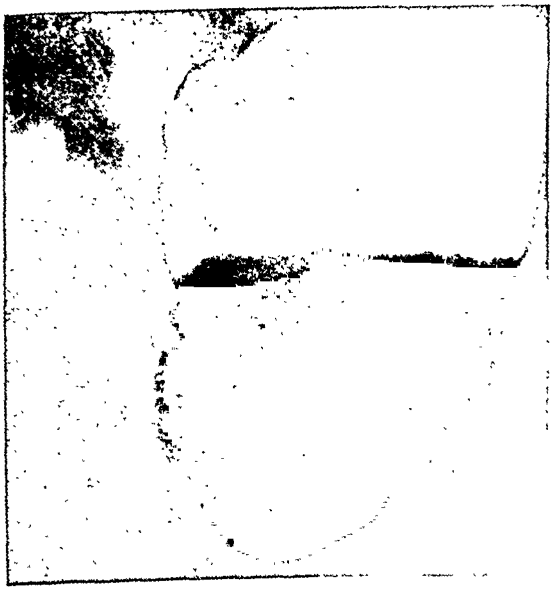

Fig. 1. Roentgenogram showing the small and shrunken stomach. The pylorus and cardia are near each other; the duodenal cap cannot be seen The air bubble is very large.

Course. The patient was given food rich in calories, but the gastric troubles continued, and the general condition changed for the worse. According to the patient's wish, he was operated on by Prof. H. Bardy, of the Maria Hospital.

Operation and Outcome. The operation revealed the following: The stomach was in an elevated position under the liver, immovable and strongly adherent to the surrounding organs. The adhesions were separated to such an extent that gastro-enterostomy could be performed The wall of the stomach was scarred and brittle, and the stomach was consequently not closely ex-

After the operatin the patient was in a state of collapse, and he died the following day.

Autopsy. All the organs were pale. The sigma anomaly was verified. The stomach was strongly adherent to the liver, peritoneum and diaphragm. Owing to the extent of rotation, the pylorus was directed downward and backward. There were no signs of peritonitis. The stomach was small, and was shrunken, especially in the lesser curvature; the distance between the cardia and the pylorus was 2.5 cm. In the lesser curvature the dorsad and ventrad cicatrization was so extensive that the stomach seemed to be divided into two parts. No ulcer or macroscopically determinable tumor was seen (fig. 2).

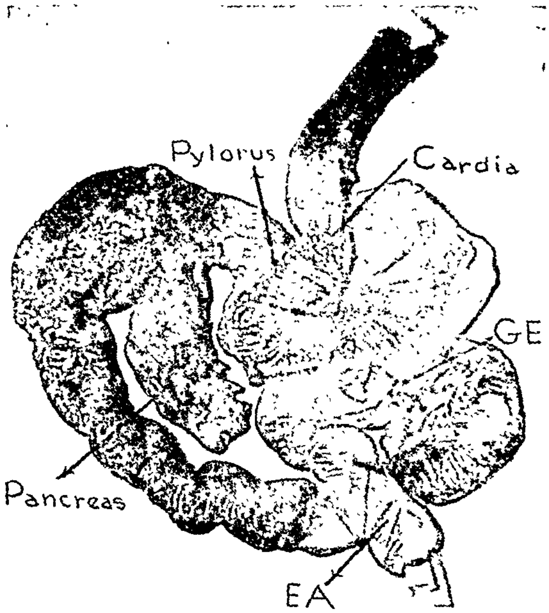

Fig. 2. Photograph illustrating the advanced cicatrization in the ventrad wall of the stomach. The short space between the cardia and the pylorus is clearly seen.

A portion of the lesser curvature was taken for microscopic examination. This showed numerous cell islets in the muscular wall, in all probability indicating cancer. The examination was somewhat difficult, owing to the postmortem changes (Professor Wallgren).

Comment. It can be concluded that the patient suffered from a chronic disease of the stomach. The history extended over forty-seven years. The

SUMMARY

1. The estrogenic hormone causes retrogression of hyperplasias appearing in the menopause if associated with menstrual irregularity.

2. Hormonotherapy should be employed only after possible malignancy has been ruled out by careful clinical study.

3. For complete retrogression of such hyperplasias three to eight months may be required.

4. Such therapy not only does not stimulate cells to become malignant but probably prevents such hyperplasias from becoming malignant.

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RÉSUMÉ

La thérapie hormonique dans la Mastose

1. L'hormone estrogénique entraîne la rétrogression de l'hyperplasie apparaissant à la menopause; elle est accompgnée d'irrégularités menstruelles.

2. La thérapie hormonique ne doit être employée qu'après exclusion absolue de toute néoplasie maligne.

3. La retrogression complète de ces hyperplasies nécessite parfois un traitement d'une durée de trois à huit mois.

4. Ce traitement a une action bienfaisante sur les cellules et probablement empêche ces hyperplasies de devenir malignes.

ZUSAMMENFASSUNG

Die Hormonentherapie in Mastosis

1. Das estrogene Hormon verursacht eine Zurückbildung der in der Menopause erscheinenden Hyperplasien wenn sie mit menstrueller Unregelmässigkeit verbunden sind.

2. Die Hormonentherapie darf nur verwendet werden, wenn die Möglichkeit eines bösartigen Gewächses durch Klinische Untersuchungen ausgeschlossen wurde.

3. Um eine komplette Zurückbildung solcher Hyperplasien zu erzielen sind 3-8 Monate erforderlich. Diese Therapie stimuliert die Zelle nicht zur Malignität vielmehr verhindert sogar dass die Hyperplasien bösartig werden.

SUMARIO

Hormonoterapia en la Mastósis

1. La hormona extrogénica causa retrogresión de la hiperplasia apareciendo en la menopausia si está asociada con la irregularidad menstrual.

2. La hormonoterapia debe de ser empleada solamente despues de haber eliminado la posibilidad de malignidad por cuidadosos estudios clínicos.

3. Para retrogreción completa de tales hiperplacia de tres á ocho meses seran requeridos.

4. Tal terapia no solamente estimúla á las células á volverse malignas sino que probablemente previene tales hiperplásia á transformarse en malignas.

RIASSUNTO

Ormonoterapia nella Mastosi

1. L'ormone estrogenico produce una retrogressione dell'iperplasia che appare nella menopausa, se associata con irregolarità mestruale.

2. L'ormonoterapia deve essere [illegible]nte usata [illegible] quand [illegible]

When the roentgen examination of the gastro-intestinal tract had reached a certain degree of development, cases of this type were observed by some authors. Already in 1909 Schmieden and Härtel[17] mentioned the unusual shape of the lesser curvature. As has already been said, the term "fistula" is not exact, but it has been used in the course of time to indicate conditions of the aforementioned type.

Lüdin (1924)[11] described a case of spontaneous gastro-enterostomy in a woman aged 61. Roentgen examination revealed a pouchlike enlargement of the stomach; the lesser curvature was rolled in, the pylorus was drawn toward the cardia, and a forty-eight hour residue was apparent. Numerous scars in the ventrad wall and the lesser curvature were seen at the operation. The prepyloric portion was adherent to the duodenum. Above the pylorus a new, abnormal opening from the stomach into the duodenum had formed. This opening was situated in the scar tissue and was regarded as a spontaneous perforation of an ulcer into the small intestine.

Monroe (1926)[15] mentioned a case in which a woman aged 52 had suffered many years from gastric disturbances. She was operated on in 1917, and the condition was regarded as an inoperable carcinoma. In 1919 the stomach was hour glass-shaped at the roentgen examination. Gastro-enterostomy was performed. The patient remained free from symptoms until 1926, when at roentgen examination some of the barium meal passed directly into the duodenum, a part of it filling up the pouchlike enlargement of the stomach and proceeding into the small intestine through the gastro-enterostomy opening. The case is remarkable; the fistula ensued in spite of the operation.

Löw-Beer (1931)[10] reported a case in which a distinct niche could be seen in the lesser curvature and also a spiral-shaped rolling in of the curvature. The lower part was enlarged, the mucosal relief changed. The pylorus and the duodenal cap could not be seen. He also described the case of Haudek[7] in which examination showed a fistulous communication from the lesser curvature to the duodenal cap. The pylorus was distinctly seen, and the lesser curvature seemed not to be shortened. Löw-Beer agreed with Lüdin[11] and said that this shape of the stomach may be regarded as an expression of spontaneous gastro-enterostomy. Melchart (1931)[12] was of the same opinion and reported two cases. In one a partition wall 15 cm. long could be seen. The pylorus and the duodenal cap could not be differentiated. The other case was almost similar, but no partition wall was seen. The first case resembles those mentioned by Dittrich,[4] Thierfelder[19] and Lüdin.[11]

In a case reported by Le Noir and his collaborators (1926)[9] the opaque meal passed from the fornix directly into the small intestine. The possibility of spontaneous gastro-enterostomy due to a chronic ulcer was apparent. At the operation it was observed that a large ulcer in connection with perigastritic processes had caused a shrinking of the stomach, shortening of the lesser curvature and an abnormal opening into the duodenum.

Moiroud (1935)[14] examined a woman aged 81. The stomach was drawn up to the left. The lesser curvature was much shrunken, measuring 3 by 5 cm., with a dorsad opening, through which the barium meal passed into the duodenum on the oral side of the flexura duodenojejunalis. Microscopically no malignant changes were observable. The localization of the fistula is rare, and the case was regarded as one of spontaneous gastro-enterostomy.

In some cases the development of the pathologic process could be followed from the time of appearance of an ulcer to the stage of the fistula. Hautefeille (1929)[8] observed a niche in the lesser curvature of the stomach in a man aged 50. One year later, a diverticulum-like

BONE TRANSPLANTATION IN DISEASES OF THE OSSEOUS SYSTEM*

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Pr[illegible] University of Istanbul
[illegible]RKEY

THE modern surgeo[illegible] sive use of bone [illegible] with satisfactory [illegible] eases of the osseous [illegible] can repair with graft [illegible] bone resulting either [illegible]

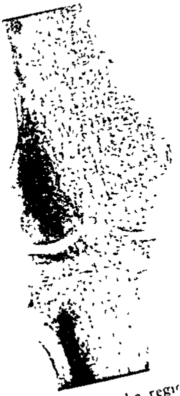

Fig. 1. Sarcoma in the region of the condyles of the femur (case 1)

malignant growths or from necrosis due to osteomyelitis. Its service in the treatment of pseudo-arthrosis is well known. The result of bone transplantations is much improved since we are using autogenous bone graft. However, the late experiences with os purum are worthy of consideration. The figures illustrate two cases of bone transplantation.

REPORT OF CASES

[illegible] Case 1. In the case of a young man of 23 years old a roentgenogram (fig. 1) showed without doubt a malignant growth at the

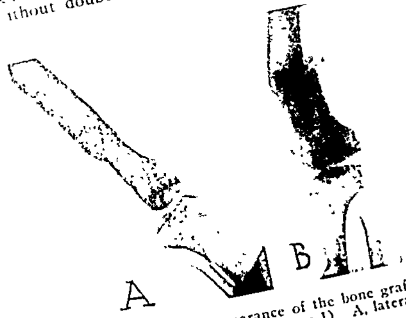

Fig 2 Roentgen appearance of the bone graft ten months after implantation (case 1) A, lateral view B, dorsoventral exposure

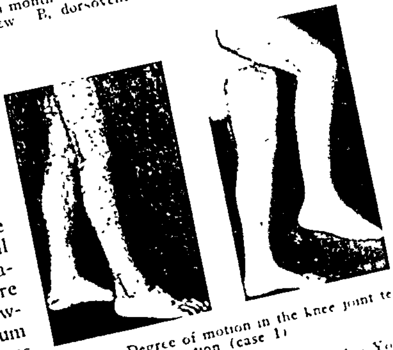

Fig 3 Degree of motion in the knee joint ten months after operation (case 1)

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* Read at the International Scientific Assembly of the International College of Surgeons, New York, May 23, 1939.

The greater curvature enlarges in the course of the disease. This is probably due to the increased work of the stomach and to changes in the stomachic wall. Purely mechanical factors may be of importance also; e. g., the contents remain a long time in the stomach, causing dilatation. A valve formation in the pyloric region or a rotation may occur. Sometimes the whole stomach may be shrunken, as in our case.

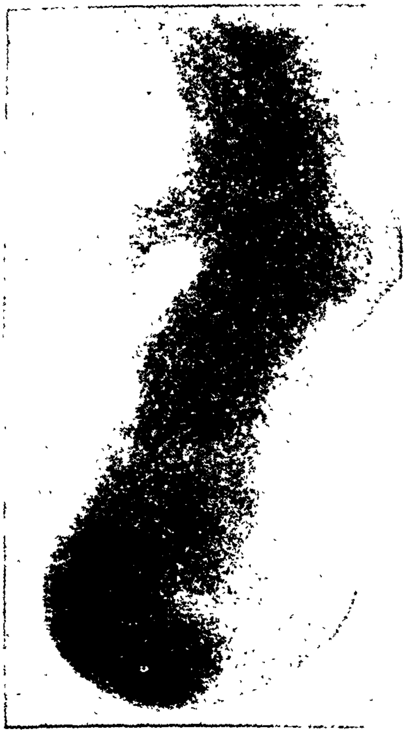


Fig. 3. A cascade stomach of an appearance usually found in cases of gastroduodenal fistula. The upper part of the corpus ventriculi is enlarged and forms a "tobacco pouch" The canalis is visible.

ROENTGEN DIAGNOSIS

The roentgen picture may, of course, vary considerably. Typical "tobacco-pouch" stomach with an enlarged greater curvature is the usual appearance. The passage of the opaque meal depends on the pathologic changes and the facilities for evacuation.

In roentgen examination a so-called cascade stomach must be considered. This is illustrated by figure 3, which first gives the impression of a gastroduodenal fistula, but at examination in other positions it is evident that one is dealing with a cascade stomach, as seen in the figure 4, where the distal part of the canalis, the pylorus and the duodenal cap are visible.

A contracture of the canalis should also be kept in mind (Haudek).[7] This is often of a spastic nature and can be made to disappear by suitable medication. It is also difficult to decide whether a malignant degeneration is present.

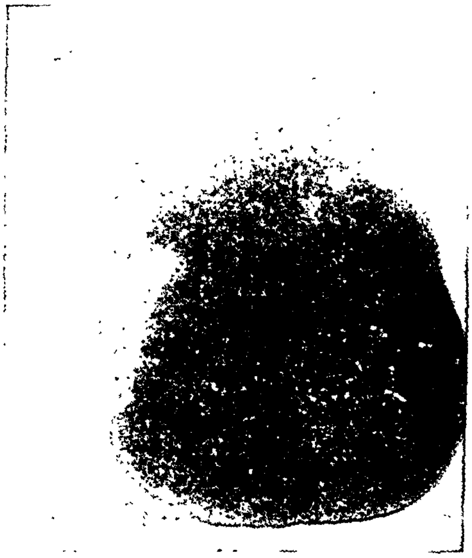


Fig. 4. Same case as illustrated in figure 3. When the patient lies on his back the lower part of the corpus ventriculi comes near the cardia. The canalis extends from this portion; the mucosal folds are clearly seen. The pylorus and the duodenal cap are seen to the left, in front of the vertebral column. The upper part of the corpus ventriculi forms the enlarged portion of the stomach, below the canalis.

Only a few cases in which the condition was diagnosed by roentgenologic examination are reported in the literature. Monroe[15] observed one case in 28,000 examined stomachs. Frank (1938)[6] reported a total of sixteen cases of true or pseudogastroduodenal fistula recognized by roentgen examination.

SUMMARY

A case of involution of the lesser curvature of the stomach in a man aged

Degeneration in einigen Zellen nachgewiesen werden.

Fälle aus der älteren Litteratur und aus der Litteratur, die auf die Röntgenbefunde Bezug nimmt werden angeführt. Ätiologie ist gewöhnlich ein chronische Magengeschwür Fortgeschrittene Fälle dieses Typs scheinen selten zu sein.

SUMARIO

Involutión de la Curvatura Menor del Estómago Complicando una Ulcera Gastrica Cronica

Un caso de involución de la curvatura menor del estómago en un hombre de 71 años de edad es descrito, en el cual la historia se extiende desde cuarenta y siete años. El enfermo fué operado pero murió. En la autopsia el estómago parecia ser pequeño. Tejido cicatricial extensivo lo dividia en dos partes. Macroscopicamente ningun tumor fué visible. En un corte de la curvatura menor degeneración maligna fué encontrada.

Casos en la literatura antigua y en la literatura describiendo examenes roentgeneológicos son mencionados. La etiología es generalmente una úlcera gástrica crónica. Casos avanzados de éste tipo parecen ser raros.

RIASSUNTO

Involuzione della piccola curvatura dello stomaco secondaria a ulcera gastrica cronica

Un paziente di 71 anni e sofferente da 47 anni di disturbi gastrici fu operato con esito infausto. Al autopsia fu trovato uno stomaco piccolo, diviso in due parti da una eccessiva forma cicatriziale. Macroscopicamente, nessun tumore fu rilevabile. L'esame microscopico di una porzione della piccola curvatura dello stomaco, mostrò degenerazione maligna in qualche cellula. L'autore cita dei casi raccolti nella letteratura. Il fattore etiologico è usualmente una ulcera gastrica cronica. Casi avanzati di questo tipo sono rari.

* * *

An **Institute for the Consideration of the Blood and Blood-forming Organs** was held by the Medical School of the University of Wisconsin on September 4, 5 and 6. The Wisconsin Alumni Research Foundation has made available the necessary funds to finance this institute. Among those who took part were **Dr. L. J. Witts,** professor of chemical medicine at the University of Oxford, and **Dr. E. Meulengracht,** professor of chemical medicine at Copenhagen. The subjects discussed included various forms of anemia and the therapy of anemia; the etiology and therapy of granulocytopenia; the formation of hemoglobin; hemorrhagic diseases; leukemia; diseases affecting lymph nodes.

* * *

Dr. Richard Leonardo, of Rochester, New York, has just returned from a visit to Europe.

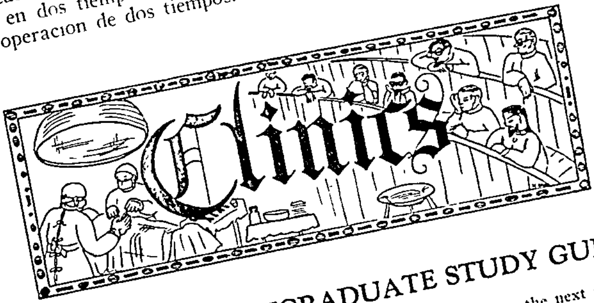
SUMARIO

Transplantación de Hueso en Enfermedades del Sistema Oseo

Mucha importancia se le da á las grandes ventajas que se obtienen [illegible] transplantación de hueso en las [illegible] dades del sistema oseo. Dos [illegible] sido reportados donde el [illegible] hueso han dado magnificos resultados. Uno fué un caso de un tumor maligno del femur, el otro fué un caso de osteomielitis aguda que afectaba la tibia. En el segundo caso resección y injerto fueron hechos en dos tiempos, y el autor prefiere la operacion de dos tiempos.

sist

Nelle malattie del sistema osseo, innesti ossei hanno un gran valore rapeutico. In un caso di tumore maligno del femore, e in uno di osteomielite acuta dello tibia, l'autore ha riportato esito felice. In quest'ultimo caso, la resezione e l'innesto furono eseguiti in due tempi. L'autore preferisce l'operazioni in due tempi.



NEW MEXICO POSTGRADUATE STUDY GUILD

Fellows and Members of the United States Chapter of the International College of Surgeons residing in New Mexico met at the home of Dr. William Randolph Lovelace of Albuquerque, New Mexico, at a dinner meeting on the evening of August 30, 1939, and completed the formation of the Postgraduate Study Guild of New Mexico, according to the by-laws of the United States Chapter of the International College of Surgeons.

Dr. Lovelace was elected president of the Guild and Dr. Donat F. Monaco, of Gallup, New Mexico, was elected secretary and treasurer.

The meeting was a majestic one and plans were made for the first scientific meeting of this Guild to be held within the next month or two, subject to the call of President Lovelace, under whose auspices the meeting will be conducted. Detailed plans are being worked out.

All Fellows and Members residing in New Mexico were present with the exception of Dr. Hugh V. Fall of Rosewell, who found it impossible to participate.

Details of the formation of the Guild and of the rules and regulations for its conduct were explained by Dr. Charles H Arnold of Lincoln, Nebraska, secretary of the Scientific Assembly of the United States Chapter of the College.

case orally, and subsequently Progynon and later Theelin by intramuscular injection. In menstruating patients 10,000 I. U. were injected 15 days after menstruation, followed after 48 hours by 20,000 I. U. and after 72 hours by 30,000 I. U. The same dosage was used with patients in their menopause, the injections being started at once and repeated at thirty-day intervals. As a result of the treatment, periods usually returned to normal with menstruating patients, while with the patients in the menopause the periods tended to reappear temporarily.

BIOLOGICAL FACTORS

That there is a definite biological foundation for hormonotherapy seems very reasonable. Beginning with puberty the galactophorous ducts, immediately before the onset of the menses, undergo hyperemic changes followed by epithelial proliferation or hyperplasia, and the terminal ducts are incited to the formation of new glandular acini.[3] This same phenomenon occurs in adults and as late as the menopause, but it then is transitory rather than formative. When ensuing atrophy does not take place, an induration or hyperplasia remains. Hyperplasia and cyst formation in the young are associated with ovarian dysfunction and irregular menstruation, but in the senile they are seen as a prolongation or intensification of cell growth.

Experience and clinical study assist in explaining the influence of ovarian hormones in inciting breast hyperplasias. Such hyperplasias are transitory if the patient has an endocrine imbalance and alternate between progression and retrogression. When the dysfunction is prolonged into the menopause, hyperplasias are especially likely to result. With the menopause no more follicles mature and no estrogenic hormone is secreted, but possibly some lutein may remain active in many cases, and it is to this hormone, in predisposed individuals, that persistence and progression of hyperplasias are attributed, with occasional evolution to malignancy. This last occurrence has been denied by many observers but without conclusive proof.

CANCER FORMATION

According to R. Muir,[5] of Edinburgh, it is impossible to diagnose beginning malignancy in breast tumors. He considers that modern advances have been limited to the establishment of certain relations and exciting causes of hyperplasias, whether benign or malignant. Certain carcinogenic substances, such as tar, a virus of unknown origin or a hitherto unknown hormonic deficiency or aberation, may be at the root of the metamorphosis. Malignancy is established slowly in certain groups of cells and takes on the character of a local rebelion with the formation of atypical elements which invade, alter and destroy the association of vital units constituting the individual organism. Recent observers explain cancer formation as a chronic irritation which causes a chronic lymphangitis and this, in turn, by isolating certain cells, suppresses their relation to the organism and prevents the influence on its vital activities of hormones, regulators or equalizing substances whose function is to maintain the harmony of cellular growth.

EFFICACY OF TREATMENT

In the United States the efficacy of hormone therapy in breast hyperplasias has been studied and discussed, notably by Dean Lewis and Geschickter.[6] Recent numerous reports from various medical centers have corroborated the effectiveness of the estrogenic hormone in hyperplasias of the breast. One clinician advised supplementary treatment with thyroidin, assuming a deficiency in thyroid secretion to be a factor in such hyperplasias.

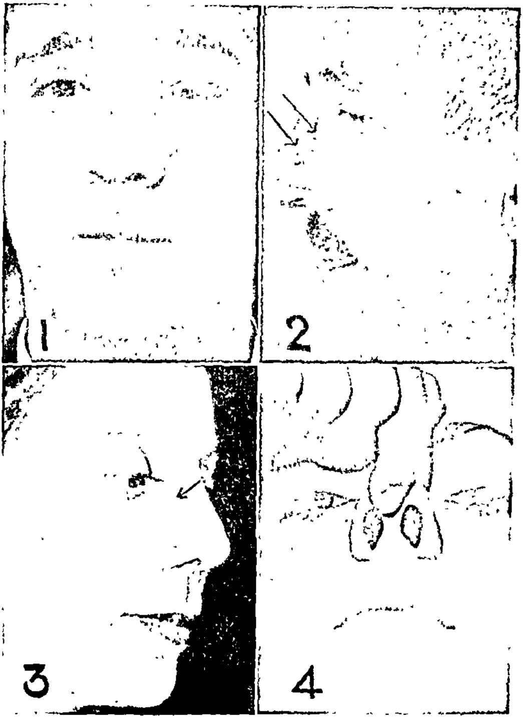


Fig 1 Infection occurring in region of inner canthus of left eye
Fig 2 Sloughing of skin of nose following operation
Fig 3 Exostosis at base of frontal process of maxilla.
Fig 4 Web joining lateral wall with septum and interfering with respiration

by ecchymosis. This is followed by considerable increase in size of the swollen area, with complete obliteration of the inner canthus. The swelling resembles that of erysipelas of the edematous type.

The second site is over the dorsum of the nose. Infection in this area manifests itself by extensive swelling, which is at first firm and which then extends up over the forehead and both eyebrows.

The third locus is generally at the vestibule, where the needle is introduced for anesthesia at the base of the frontal process of the maxilla. Minor infections may occur at the base of the columella near the anterior nasal spine.

Diagnosis of Early Infection. The diagnosis of early infection rests primarily upon slight postoperative rise in temperature. The follow which help in ascertainin condition:

esame clinico abbia escluso la possibilità di tumore maligno.

3. Per la completa retrogressione di tale iperplasia, un periodo di 3 a 8 mesi, è necessario.

4. Questa terapia non ha azione maligna sulle cellule, ma probabilmente previene che tali iperplasie divengano maligne.

* * *

Italian Physicians Appointed as Senators

The following physicians have been named senators of Italy by the King, upon the recommendation of the Duke: Prof. Cesare Agostini, born Oct. 16, 1864, a specialist in nervous and mental diseases, president of the Faculty of Medicine of the University of Perugia; Prof. Roberto Alessandri, born Dec. 1, 1867, director of clinical surgery of the University of Rome and president of the Royal Medical Academy of Rome; Prof. Giulio Alessandrini, author of the only Italian book on parasitology, whose work in this field was responsible for the establishment of an official chair, which he holds; Prof. Lorenzo Bardelli, born June 30, 1869, head of the department of ophthalmology and president of the Faculty of Medicine of the University of Florence; Prof. Giuseppe Bastianelli, director of the Institute of Malaria (Ettore Marchiafava) and head of the department of semeiotic medicine at the University of Rome; Prof. Arturo Beretta, born in 1876, director of the odontology clinic and of the School of Odontologic and Prosthetic Dentistry and president of the International Stomatology Association; Prof. Aristide Busi, born in Bologna July 21, 1874, head of the department of radiology of the University of Rome; Prof. Luigi D'Amato, born in 1874, director of the department of clinical medicine at the University of Naples; Prof. Giovanni Masnata, born March 27, 1870, doctor of operative medicine and director of the Civil Hospital of Stradella, Sansepolcrista; Prof. Cesare Micheli, born in Spoleto May 17, 1866, obstetrician and gynecologist, chief obstetrician of the Hospital of Rome and director of the Maternity Hospital of St. Giovanni from 1910 to 1935; and Prof. Alberto Pepere, born July 5, 1878, professor of pathologic and histologic anatomy, and founder of the School of Pathologic Anatomy, at the University of Milan.

Victor E. Levine, professor of biological chemistry and nutrition at the School of Medicine of Creighton University, is continuing medical and biological studies of the Eskimo under the auspices of the U. S. Public Health Service. His base is Kotzebue, north of the Arctic Circle. This is his fifth trip to the Arctic.

* * *

At the annual meeting of the Minnesota State Medical Association it was voted to present the distinguished service medal and scroll, awarded to members for special contributions to the work of the association, to the late **Drs. William J. Mayo** and **Charles H. Mayo**. Photographs of these two doctors will be hung in the Medical School of the University of Minnesota.

* * *

Dr. Ernst Ruska was awarded the prize of the Senckenberg Foundation for his work with the electron microscope. The prize, which has the value of about 4,000 marks, is awarded every three years to a German investigator for contributions to the advancement of medicine or science and was established one hundred and seventy-five years ago. It was presented at this time on the occasion of the twenty-fifth anniversary of the university at Frankfurt-am-Main.

* * *

Dr. Laignel-Lavastine, professor of the history of medicine at the University of Paris, has been elected president of the International Society of the History of Medicine.

* * *

Dr. Duncan Graham, of Toronto, was chosen president-elect of the Canadian Medical Association at the recent meeting in Montreal; Dr. Frank S. Patch, of Montreal, was installed as president. Next year's meeting will be in Toronto.

from the dorsum of the nose. It may also result from placing splints too tightly over the fractured frontal processes of the maxillae, causing ischemia which subsequently leads to necrosis of the skin.

Exostosis may occur at the site where a bone has been cut or fractured (fig. 3). This may occur on the dorsum of the nose or at the bases of the frontal processes of the maxillae. There may result a natural growth of bone as callus formation or as the result of the fusion of the bone spicules remaining near the surface from which they were severed.

Often the eagerness of the surgeon to impose improvement upon the form of the nose may cause him to impair its *function*. When the limiting bony wall of the nose is narrowed, partial obstruction and respiratory difficulty may ensue. Thus it is essential to ascertain whether deviation of the septum is present, and if so, whether operation on it is indicated before plastic correction is attempted. If too tight compression is placed on the fractured and medially displaced frontal processes of the maxillae, obstruction to breathing may occur fig. 4). At times a web joining the lateral wall to the septum may occur if two raw surfaces have been unduly exposed. The plastic surgeon at times must learn to sacrifice cosmetic perfection for normal function.

Laszlo[3] pointed out that *anosmia* may be temporary or permanent. Temporary anosmia disappears when the edema has disappeared from the nose. In cases of permanent anosmia some traumatic injury has been suffered by the olfactory region.

Cosmetic defects may be the result of faulty technic. Too energetic use of the rasp over the dorsum of the nose is to be deplored because its action will stimulate new bone formation. The original hump may then be replaced by a thick, broad, bony mass. More than a slight hump should be removed by the use of the saw which leaves a sharp cutting edge.

III. CIRCULATORY COMPLICATIONS

Hemorrhage is the most frequent of the circulatory complications. The surgeon must use adequate amounts of epinephrine during rhinoplasty to prevent bleeding. Other causes of bleeding may be separation along faulty lines of cleavage or tearing of the mucous membrane.

Hematomata may occur in a closed space. The most common site is alongside the base of the frontal processes of the maxilla. To avoid this complication the nasal clamp immediately should be applied firmly and tightly, to prevent postoperative hemorrhage under the skin. This also minimizes the amount of ecchymosis about the eyes. The clamp should be left in place for 48 hours or longer.

Shock is rarely seen following plastic operations of the nose.

IV PSYCHIC COMPLICATIONS

Mental complications often follow rhinoplastic operations. Long before operation the patient had to combat his feeling of inferiority by overcompensating for his deficiencies or by escaping into an introverted world of his own. His circle of friends may have been divided on the question of correction, and thus the patient could combat this conflict of ideas only with his emotions because of a pre-existing oversensitivity. Reactions following rhinoplasty may range from psychosis to mania, and even suicide. It is good prophylaxis to have a psychiatrist's opinion of any patient who pre-operatively gives evidence of possibly becoming a postoperative mental problem.

AUTHOR'S RESULTS

A review of 500 consecutive cases operated upon for nasal reconstruction

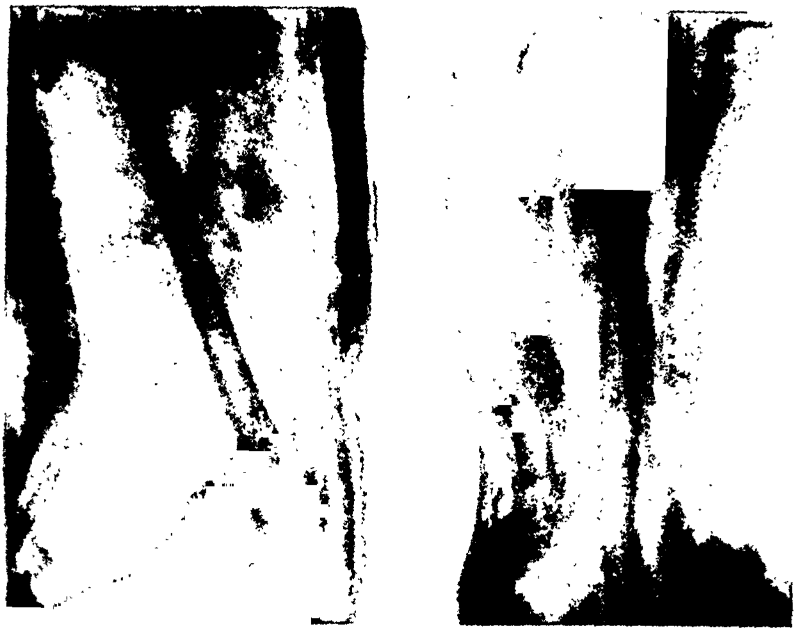


Fig. 4. Roentgenogram showing implantation of bone (case 2, first stage of operation).

lower end of the femur. Roentgenologic and clinical examination revealed no infiltration of the nerves and the main blood vessels of the popliteal space. There were no pulmonary or glandular metastases.

The patient refused the proposed amputation. Thus we were obliged to employ a less radical surgical operation, resection of the tumor followed by a plastic bone graft replacement. The patient was operated on by Dr. Rudolf Nissen, the Chief Surgeon of the Clinic.

After removal of the tumor, a large part of the upper third of the tibia was resected in the sagittal direction; the joint cartilage and capsule were not removed. The graft was implanted so that its lower end came in connection by mortise with the shaft of the femur. The leg was immobilized in a plaster cast. The pathologic report was chondrofibrosarcoma. Solid bony union occurred after four months. A roentgenogram taken ten months after the operation (fig. 2) showed excellent bony union. One can see the osseous rearrangement process in the graft. Some flexion of the knee is possible (fig. 3). There is a small degree of lateral instability, which has been corrected by a brace.

Comment. I shall not discuss the value of the most radical amputation and the less radical resection. Dr. Albee reported in 1936 thirteen cases of resection of malignant growths of the bone, in which the results were good. In our case, the opposition of the patient to amputation obliged us to perform a less radical procedure, but also with satisfactory results.

Case 2. A boy aged 9 years had acute osteomyelitis for about three years. He walked painfully with a large brace extending to the hip and with a cane. A roentgenogram showed the loss of the whole shaft of the tibia. A large skin scar and a shortening of 14 cm. were present. There were no signs of infection.

In this case I made the transplantation of the fibula of the same side, in two stages. Hahn first published this operation.

In the first stage, I resected the upper part of the fibula just below the head of the bone and implanted it in the upper epiphysis of the tibia through the same incision (fig. 4). The leg was put in a plaster cast. About three months after the operation, the bony union was perfect (fig. 5). In the second stage, I resected the lower part above the malleolus and implanted it in the lower epiphysis of the tibia, through the same incision (fig. 6). The leg was again placed in a plaster cast. In three months the bony union was perfect.

Figure 7 shows the growth of the graft. Two years after operation the thickness of

RIASSUNTO

Le complicazioni nelle operazioni rinoplatiche

Un riassunto delle complicazioni che possano sopravvenire nelle operazioni rinoplastiche, viene discusso dall'autore. Queste complicazioni vengono classificate in 4 gruppi: infezioni, modificazioni strutturali o meccaniche, modificazioni circolatorie, e psichiche. Nella casustica dei 500 pazienti dell'autore, queste complicazioni vengono studiate e discusse.

The Committee on Scientific Research of the American Medical Association has made a grant to **Dr. Fritz Schiff,** of the department of bacteriology and serology of Beth Israel Hospital, New York City, to be applied toward his work on the serological classification of Salmonella, and a grant in support of work on the physiology of the peripheral blood vessels which is being conducted by **Dr. Roy H. Turner,** of the department of medicine of Tulane University.

Dr. Raymond C. Parker, until recently an associate in experimental surgery at the Rockefeller Institute for Medical Research, New York, has accepted a position with E. R. Squibb and Sons, at New Brunswick, N. J., where he is in charge of the Virus Division of the Biological Laboratories.

Dr. Philip R. Lehrman has been promoted to the rank of clinical professor of neurology and psychiatry at College of Physicians and Surgeons, Columbia University, New York.

Dr. Paul B. Brooks, deputy state commissioner of health, was reappointed a member of the New York State Board of Medical Examiners for a term of three years, effective August 1, 1939.

Col. Albert G. Love, U. S. Army Medical Corps, received the Wellcome Prize of the Association of Military Surgeons of the United States at the recent meeting of the association held in Washington, D C.

Prof. Theodor Vahlen, president of the Prussian Academy of Sciences, has been awarded the Goethe Medal for Art and Science by the German Chancellor

Dr. Frances L Haven, associate professor at the University of Rochester School of Medicine and Dentistry, has been granted a research fellowship by the National Cancer Institute at Washington.

Prof. Ernst Freund has resumed his work as director of the Pearson Research Laboratory, which has been removed from Vienna to London. The laboratory has specialized in work on food chemistry and nutrition in its relation to cancer. It was founded by Frederick Pearson, an American now living in England. Dr. Freund's assistant, Dr. Gisa Kaminer, who was for many years surgeon at the Rudolf Hospital in Vienna, is also working in the laboratory at London.

Dr. John A. Kolmer, professor of medicine at Temple University, Philadelphia, was invited by the Health Section of the League of Nations to represent the United States at the fourth International Conference on the Serologic Diagnosis of Syphilis, held in Copenhagen from September 25 to October 6

Dr. A L Derbyshire, of Sterling City, California, who has ministered to the ill and injured in this lumbering community for the past ten years, has become a ship surgeon on a Pacific liner. He is eighty-nine years of age

FELLOWSHIP DUES, AS WELL AS DUES FOR MEMBERSHIP AND ASSOCIATE MEMBERSHIP, ARE PAYABLE NOW AND SHOULD BE SENT TO DR. BENJAMIN I. GOLDEN, DAVIS MEMORIAL HOSPITAL, ELKINS, W. VA.

myelitis affecting the tibia. In the second case, resection and grafting were done in two stages, and the author prefers the two stage operation.

DISCUSSION

Dr. Fred H. Albee, New York: Up to recently, the attitude has been as follows: For those conditions that are ostensibly benign the curet has been used—a most inadequate instrument. This has been resorted to particularly in cases of giant cell tumors. If there is any malignant tendency at all, these tumors recur, and then the curet is still being used. I have had a number of patients come to me on whom the curet had been used, even after recurrences of tumor.

The other surgical procedure is amputation. As a general scheme of treatment in bone malignancies, I feel that the profession should be mindful of an operation such as the one that has just been so beautifully demonstrated—resection of the shaft and the tumor and immediate replacement by bone.

In analyzing and comparing my series of cases with cases in which I had previously done amputation, I find that the mortality or the safety of the patient as to life is about the same. Now I feel that the resection will be used eventually, when we get more experience. When the necessity of early resection is impressed on the surgical profession, there will be a lower percentage of mortality than that obtained in cases of amputation, for the reason that one can induce a patient to have a resection but it is difficult to persuade him to have an immediate amputation. All patients, or at least a large number of them, will resist amputation. They come to the surgeon when the malignant process is in its early stages. One recommends amputation, and they will not have it. They have x-rays made, causing delay, which adds to the ultimate mortality—through either extensive local involvement or catastrophe. I advise against x-rays and recommend that one proceed to the operation. X-rays can be used after the operation, but cautiously before, because of the devitalizing effect on the tissues. It is a discouraging and tragic experience for a surgeon to have a patient brought to him with these malignant processes and find that the tissues have been so devitalized by excessive x-ray exposure that his hand is absolutely stopped. He can do nothing, and it is no use to attempt surgery in these cases. I would sound a word of warning against the over-use of x-ray therapy in such cases. Of course, if the case is desperate, one can resort to the x-rays afterward, but there is danger of over-use.

It has been surprising to me how successful surgeons are in resecting tumors of considerable duration and tumors that have been subjected to x-rays. A protective membrane seems to establish itself immediately outside the tumor, between the soft parts and the important structures, such as nerves and blood vessels.

I think I may say that the surgeon will, in many cases, surprise himself by being able to remove all of the malignant growth and still leave .important structures intact. That is very encouraging.

RÉSUMÉ

Les greffes osseuses dans les maladies du système osseux

Les greffes osseuses presentent de grands avantages dans les maladies du squelette. L'auteur rapporte deux cas qui lui ont donné deux succès: un cas de tumeur maligne du femur et un autre cas d'ostéomyélite du tibia. Dans le second cas, la resection et l'implantation furent faites en deux temps. L'auteur préfère l'intervention en deux temps.

ZUSAMMENFASSUNG

Knochen Transplantation bei Krankheiten des Knochenssystems

Die Vorteileder Knochentransplantation bei Erkrankunken des Knochensystems werden betont. Zwei Fälle werden berichtet, bei denen Knochenpfropfungen gute Resultate gaben, 1 Fall einer bösartigen Geschwulst des Oberschenkels, der andere ein Fall von akuter Osteomyelitis der Tibia. Im zweiten Falle wurde Resektion und Propfung zweiseitig ausgeführt, und der Autor bevorzugt die zweiseitige Operation.

two or three hours from the time he gets back to bed and not suffer from thirst. This no doubt improves his mental condition a great deal.

We have also given attention to the study of the hemogram before deciding the time best suited for operating, and we have considered leukocytosis as an index that infection is active and surgical intervention in this condition will probably upset convalescence.

ANESTHESIA

Preference has been given to local and splanchnic analgesia, once the abdomen has been opened (Braun). On some occasions we have used combined methods: local and intravenous employment of amytal (this is no longer in use), local employment of protoxide of nitrogen and ether, local anesthesia and evipan, spinal anesthesia (tutocain, novocain, nupercaine and pantocain) and rectal anesthesia (avertin). Evipan has been very helpful in closing the wall after operation when used in sufficient quantities to desensitize the patient and produce relaxation of the abdominal muscles sufficient to permit easy closure. Such results are not obtained with the use of protoxide of nitrogen alone or in combination with ether, in which case deep narcosis must be produced in order to work without straining the wall.

OPERATIVE TECHNIC

We have tried different technics (Kocher, Billroth I and II, Moynihan I and II, Polya and its variations, etc.), giving preference to that of Reichel, Hofmeister and Finsterer, based on the following principles: resection of the two thirds of the stomach, including the lesser curvature as much as possible, sectioning parallel to the long axis of the body, and partial closure of the gastric section (the upper part), using only the inferior portion for the anastomosis, which is done through the mesocolon and with a short loop to avoid duodenal back pressure.

When it has been feasible, the lesion was included in the resected specimen, but when we dealt with ulcers situated at the duodenum, far from the pylorus, ulcers the anatomic conditions of which made extirpation dangerous, we have preferred the classic exclusion method of Finsterer (gastrectomy, leaving the lesion in situ). We have had excellent results with this technic and never had cause to regret its use.

The duodenal stump is made with the greatest care, keeping in mind that one of the most important details during this operation is to maintain a good blood supply to the visceral wall. Rupture of the duodenal suture is a distressing complication and is sometimes fatal. In our early experience we had various accidents of this kind, but now, with a better understanding of the problem, this complication is rare, and when it is present adequate treatment is instituted: continuous suctions first and then packing of the sinus.

When making the anastomosis, proper hemostasis is of capital importance to avoid postoperative bleeding, which can be very serious, even threatening the patient's life. Before starting to suture, the bleeding vessels must be tied.

POSTOPERATIVE CARE

The patient is placed on a Fowler's bed, and the gastric tube is connected to an aspiration system such as Wangensteen's. The patient is allowed to drink water every two or three hours, which is immediately aspirated, but it is useful to prevent thirst, and at the same time keeps the stomach empty, avoiding the deleterious effects of retention (this method was introduced among us by Prof. Núñez Portuondo). The water balance of the body is maintained by continuous venoclysis of dextrose and saline solutions in amounts of 2,000 to 3,000 cc. every twenty-four [illegible] depending on the output th[illegible] emunctories: kidneys, sk[illegible]

COMPLICATIONS OF RHINOPLASTIC SURGERY

MORTIMER M. KOPP, M.D.
NEW YORK

THE reports of plastic surgeons today tend to emphasize the wonders of their field, while appallingly little has been stated about the complications encountered during and after operation, especially in rhinoplastic surgery. A greater number of patients is being faced with a greater number of complications than ever before.

CLASSIFICATION

Complications following rhinoplasty may range all the way from a minor infection to death. Palmer[1] classifies these possible complications as follows:

I. *Infections:*

(*a*) Cellulitis
(*b*) Abscess
(*c*) Sinusitis
(*d*) Pharyngitis
(*e*) Tonsillitis
(*f*) Pyelitis
(*g*) Arthritis
(h) Flare-up of Chronic Tuberculosis
(*i*) Parotitis
(*j*) Thrombophlebitis
(*k*) Septicemia
(*l*) Pulmonary Complications of Infectious Origin:
    bronchitis, bronchopneumonia, infarction, embolism, pleurisy, pulmonary abscess, empyema and atelectasis.

To this group I shall add:

(*m*) Acute otitis media, and
(*n*) Meningitis.

Continuing Palmer's classification:

II. *Structural or Mechanical Complications:*

(*a*) Narrowing of the nares
(*b*) Loss of sense of smell
(*c*) Difficulty in breathing
(*d*) Interference with normal respiratory functions of the nose by damage to the mucous membrane
(*e*) Cosmetic defects due to faulty technic, such as cutting through cartilage of the columella.

To this group may be added:

(*f*) Exostosis, and
(*g*) Sloughing of the skin of the nose.

Again resuming Palmer's classification of complications:

III. *Circulatory Complications:*

(*a*) Hemorrhage
(*b*) Shock
(*c*) Induration of wounds
(*d*) Hematoma
(*e*) Gangrene
(*f*) Localized thrombosis
(*g*) Embolism
    1. Fat
    2. Gas
(*h*) Infarction
(*i*) Metabolic Complications
    1. Acidosis
    2. Hyperglycemia
    3. Absorption of transplant, either bony or cartilaginous.

IV. *Psychic Complications:*

Psychoses ranging all the way from simple depression to mania.

The scope of this subject is so great that it is impossible to dwell on all complications in one paper. I shall consider here those complications which, in my own experience, have been most outstanding.

I. INFECTIONS

Notwithstanding the assiduous efforts made pre-operatively, the field of operation is never completely free from micro-organisms. In all operations the tissues must offer resistance to a certain amount of infective organisms. If contamination exceeds the degree of resistance, infection results.[2]

Sites. The most usual site for the development of infection is the region of the inner canthus of one or both eyes (fig. 1). Within the first 36 hours a small firm swelling appears, followed by redness, which can easily be differentiated from the redness caused

(1.2 per cent of the whole [illegible] which secondary peptic ulcer [illegible]. In one instance the ulcer was [illegible] through the gastroscope by [illegible] Alvarez forty-five days after [illegible] operation, and in another the border of the lesion showed something resembling a foreign body, possibly a fragment of the suture material employed and not reabsorbed, although we always used catgut for all the inner sutures of the anastomosis of the digestive tract. This patient was not operated on a second time, but remained in the ward for observation. The third patient began to complain again of symptoms six months after gastrectomy. This patient was reoperated on three years later, and a callous ulcer at a marginal site and another on the mesenteric border of the jejunal efferent loop were discovered. The second operation was extremely difficult, as is generally the case in this condition. We resected the affected intestinal loop along with part of the gastric wall and made a new gastroentero-anastomosis. We feel that the future of the patient is uncertain.

POSTOPERATIVE STUDY

The gastric function of a large number of our patients has been studied by Drs. Milanés, Falla Alvarez and Vega. In more than two thirds of the cases they observed secretion of chyle during the fasting period, as well as in the digestive cycle. In 9 per cent of the cases hyperchlorhydria persisted, although it was not as marked as before operation. The amount of hypersecretion has also been favorably modified in most of the cases. In more than 50 per cent of the patients hypermotility was found. For more details we recommend to the reader the works of Dr. Fernando Milanés.[1] This investigator studied a large series of patients, many of whom were operated on by us. The anastomosis has been very successful in the great majority of cases. Few of the patients had [illegible] spasm without symptoms, and one, who had been operated on for an ulcer [illegible] the lesser curvature, suffered a marked spasm of the stoma during the digestive cycle.

TABLE 2

SUMMARY OF THE 255 CASES

	No. of Cases	*Percentage*
Sex		
Females	31	12.16
Males	224	87.84
Age		
Oldest patient, 74 yrs		
Youngest patient, 16 yrs.		
Localization		
Duodenal	116	45.00
Juxtapyloric	60	20.00
Lesser curvature	79	35.00
Type of Anesthesia		
Local and splanchnic	227	89.00
Local and amytal	6	2.37
Local and evipan	9	3.50
Gas and ether	5	2.00
Spinal	7	2.74
Rectal (avertin)	1	0.39
Type of Operation		
Billroth II	1	0.39
[illegible]	1	0.39
[illegible]	4	1.56
[illegible]	235	92.16
Complications		
Pulmonary (From bronchitis to lung abscesses)	30	11.77
Subphrenic abscess (Consecutive multiple lung abscesses)	1	0.39
Duodenal fistula (Early and late)	11	4.31
Hemorrhage (On 2nd postoperative day)	2	0.78
Diarrhea (Always mild and transitory)	8	3.12

COMMENT

Although subtotal gastrectomy is far from being the ideal treatment of gastric and duodenal ulcers, there is no doubt that for the present, at least, it must be considered the operation of choice in the surgical treatment of these conditions, for, as has been pointed out by Milanés in his work, after subtotal gastrectomy a physiopathologic condition militating against the formation of ulcer is established, doing away with hyperchlorhydria and hypersecretion and improving the vag[illegible] wel[illegible] th[illegible]

1. An increase in pulse rate without a rise in temperature denotes irritability or pain.
2. A slow pulse with a rise in temperature denotes the absorption from bleeding of fibrin ferment.
3. A rapid pulse with a rise in temperature denotes infection.

Treatment of Infection. For *superficial infections,* applications of magnesium sulphate or compresses of Thiersch may be used at first. If they persist in spite of this treatment, very early incision and drainage must be instituted. In the presence of abscess, drainage should be obtained by re-opening the incision leading to the site of abscess, but if it is too distant from the incision for this procedure, it becomes necessary to drain it externally over its site. If, despite incision and drainage, infection should spread, bacteriophage or autogenous vaccine should be used. In some instances it will be found that the ordinary stock vaccines prove more efficient.

Experimental work shows that postoperative *angina* results from infection of the mucous membrane of the nose by lymphatic extension. This infection will occur in any nasal operation in which prolonged tamponade is used. This permits epithelial destruction and invasion by organisms. The tonsils, on the other hand, have been found experimentally to become involved by extension of the infection by way of the veins. When the richly vascularized turbinates are infected, the tonsils may become secondarily infected.

The complication of postoperative angina may occur in patients who are crowded into one ward. Patients who are placed in private rooms or who are ambulatory are seldom troubled with this condition. In addition to the obvious bacteriological explanation, there is a psychological one. It seems to be contagious because, in the event that one patient contracts it, all in the room seem to do likewise.

Whenever the mucous membranes become very edematous with decrease and possible blocking of air-way surface, the patient resorts to mouth breathing. The subsequent drying of the pharynx decreases its resistance, so that organisms can invade it more readily. In some of these cases there is also possible the accumulation of mucus in the postnasal spaces, which contributes to the possibility of infection.

These anginal attacks usually begin with severe headache and temperature which ranges from 100 to 101° F. The patient is weak and examination occasionally reveals follicular tonsillitis. With local treatment of bicarbonate of soda alternating with sodium perborate, an oxidizing agent, the angina subsides quickly and the temperature becomes normal in from two to four days.

Acute *otitis media* may occur after rhinoplasty, due to tamponade or forced blowing of the nose. The patient is advised not to blow his nose.

The lacrimal sac oftentimes may become inflamed (*dacryocystitis*) by an extension of an infectious process or by direct trauma. This appears as a cystic swelling below the inner canthus. On pressure, fluid and pus may come out through that punctum.

Meningitis—one of the dreaded complications of submucous resection of the septum—is usually of short duration. The cause is not definitely known but the condition is usually due to severe infection or the possibility of injury to the cribiform plate.

II. STRUCTURAL OR MECHANICAL COMPLICATIONS

Sloughing of the skin of the nose occurs most often following operations performed by inexperienced surgeons (fig. 2). It may result from cutting the layers of the skin too close to the epidermis while the skin is being separated

by the writer reveals the following complications:

	Cases	Per Cent
Infection	4	0.8
Dacryocystitis	1	0.2
Exostosis	3	0.6
Hematoma	3	.06
Hemorrhage	2	0.4
Adhesions	2	0.4
Difficulty in breathing	4	0.8

Otitis media, anosmia and meningitis were not encountered.

CONCLUSIONS

1. A proper history of each patient and a thorough general examination are essential prerequisites to prevent complications.

2. Thorough operative training and operation-room sterility are essential.

3. Infections may be superficial, deep or general. Their presence must be recognized and treated accordingly.

4. The function of the nose must be considered of greater importance than the form of the nose and must be kept intact by proper management.

5. Hemorrhage and hematomata, the most important of the circulatory complications, can be prevented.

6. The psychic equivalent in rhinoplasty must be considered, and the help of a psychiatrist pre-operatively may save postoperative dilemma.

SUMMARY

An outline is given of the complications which may follow rhinoplastic surgery. These are grouped under the four headings of infections, structural or mechanical complications, circulatory complications, and psychic complications. Each of these four types is discussed. Percentage of occurrence in 500 of the author's cases is given.

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2. Harrison, P. W.: Postoperative Infections, Ann. Surg. 104:316-318 (Aug.) 1936.
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RÉSUMÉ

Les Complicationes dans les Opérations Rhinoplastiques

Il est donné dans cette communication un résumé des complications qui peuvent survenir dans le cours et après les opérations rhinoplastiques. L'auteur groupe ces complications sous quatre rubriques: infections, changements structurels, changements circulatoires et modifications psychiques. Ces complications sont étudiées et discutées. Leur frequence dans cinq cents cas de l'auteur est énumérée.

ZUSAMMENFASSUNG

Komplikationen in der plastischen Nasenchirurgie

Es wird eine Zusammenfassung der Komplikationen die plastischen Nasen-Operationen folgen können gegeben. Diese wurden gruppiert in 4 Infektionsabschnitte. Strukturelle oder mechanische Veränderungen Kreislaufs Veränderungen und psychische Veränderungen. Jeder dieser Abschnitte wird discutiert der Prozentsatz der vom Verfasser 500 beobachteten Fällen wird angeführt.

SUMARIO

Complicaciones de la Cirugía Rinoplástica

Una reseña es dada de las complicaciones que puede seguir cirugía rinoplástica. Estas estan agrupadas en los cuatro encabezamientos de infecciones, cambios estructurales y mecánicos, cambios circulatorios, y cambios físicos. Cada uno de éstos tipos es discutido. El por ciento presentado en 500 de los casos del autor es dado.

From the moment we became aware of the fact that infection had extended beyond the appendix proper, we directed our efforts to the removal of the entire infected area

Subsequent to this dramatic case which we might term "recurrent appendicitis after appendicectomy," we have performed approximately 300 appendicectomies and we have observed that in 20 instances the inflammation extended beyond the appendix itself and definitely encroached upon the cecal region In other words, in 20 cases out of 300 cases of acute appendicitis confirmed by operation, we found evidences of typhlo-appendicitis. To be sure, the phenomena observed in these cases were not always as serious as in the case reported, but we believe that certain clinical facts and the operative measures required by them should be recognized

TYPES OF INFLAMMATION

The phenomenon of ultra-appendicular inflammation—if it can thus be called—may be divided into three categories, as follows:

1. *Typhlo-appendicitis* This is a simple infection extending to the base of the cecum surrounding the appendicular implantation.

2. *Typhlitis:* The infection may extend to the entire base of the cecum.

3. *Pantyphlitis:* The infection may cover the entire cecal region up to and including the ileocecal valve and the terminal area of the ileum

Essentially these three categories represent a greater or less degree of extension of the same infection Let us consider them in some detail.

1. *Typhlo-appendicitis.* We expose the cecum The appendix appears inflamed and congested and in the process of becoming gangrenous. The case is typical of acute appendicitis. If the base of the cecum is soft and noncongested, we can say that the infection is localized in the appendix. Simple appendicectomy without inversion of the stump is the operation of choice; but it is important to inspect closely the entire rim of the appendicular implantation and its adjacent tissues. If this circular zone is edematous or infiltrated, the infection has extended beyond the appendix. In the presence of a typhlo-appendicitis it is not enough to do a simple appendicectomy without stump inversion: to do that would be equivalent to removing only a portion of a malignant tumor. We must proceed so as to avoid the possibility of a perforation, such as occurred in the case reported above. We must protect the peritoneum against the infection of the cecal wall. This is accomplished by inversion, not only of the stump but of the entire infiltrated area, in the form of a cecal fold; the cecum is ample enough to permit such a procedure. From this point of view, the problem of inversion of the appendicular stump assumes real importance.

In cases in which inversion of the stump is an absolute necessity, we are dealing with a localized typhlo-appendicitis; the peritoneum is in danger of an infection which we have not been able to extinguish and which continues to spread. The important point to remember is that we always should invert the entire infiltrated cecal region when typhlo-appendicitis is present.

2. *Extensive Typhlitis.* Stump inversion is not always possible when the zone of infiltration, edema and induration have extended beyond the base of the cecum. We cannot possibly remove the lesion In these cases it is our practice to bring the cecum up to the edges of the operative incision in the peritoneum, which is drained by a very fine wick, so that all the infectious elements which might induce serious peritoneal complications are maintained in close contact with the abdominal wall

3. *Pantyphlitis.* The entire ileocecal segment is infiltrated. The meso-

TREATMENT OF GASTRODUODENAL ULCER BY SUBTOTAL GASTRECTOMY

SUMMARY OF EXPERIENCE*

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AND
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SINCE 1926 we have been treating gastric and duodenal ulcers by partial gastrectomy, with results superior to those obtained by less radical measures. The great frequency with which we observed a high percentage of gastritis, at least in our country, and the study of our resected specimens, together with the study of ulcerated lesions, have been in part responsible for our selection of extensive gastrectomy as the method of choice in the treatment of patients with such conditions.

In this paper we summarize the experience obtained in the hospitals Calixto Garcia and Joaquín Albarrán and, recently, at the National Police Hospital, during a period of thirteen years, the number of patients on whom gastrectomy has been done totaling 255. The results in 200 of these cases have already been discussed by one of us at the Seventh Pan-American Medical Congress held in Havana in January 1938. We have had, in clinical study and special investigations, the collaboration of our distinguished colleagues Milanés, Falla Alvarez, Vega, Sotolongo, Cutié and Zayas.

We are not including in this series those patients operated on during hemorrhage and perforation (we have done several such operations); those who had previously been submitted to gastro-enterostomy or those operated on for ulcers with malignant degeneration.

In regard to sex, 224 males and 31 females have been operated on.

The oldest patient was 74 years of age and the youngest 16. The longest period elapsed from the beginning of symptoms to the time of operation was thirty years, the shortest six months.

PREOPERATIVE TREATMENT

We have given special care to measures for general rehabilitation: hydration, etc. In anemic subjects and those with a low plasma protein level, transfusions have been used. If malnutrition was present, the patient was kept on a nutritive diet before operation. Focal infections were eradicated. Even in the absence of obstruction the stomach was washed for several days previous to operation. We had little experience with vaccination. Immediately before the patient is sent to the operating room, the Levine tube is passed through the nose, and it is kept in position for the first three days after operation. This reduces postoperative edema at the site of the stoma and combats toxemia caused by retention. The patient may begin to drink water every

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* Read at the International Scientific Assembly of the International College of Surgeons, New York, May 22, 1939.

compliquer l'appendicite. Le traitement de ces conditions est donné en détail.

ZUSAMMENFASSUNG

Typhloappendicitis

Ein Fall von akuter Appendicitis, in einem 18 Jahre alten Mädchen, wird berichtet. Komplikationen machten eine zweite Operation notwendig am dritten Tage nach der Operation, als man eine Perforation der Basis des Coecums fand. Genesung folgte. Mögliche Komplikationen sind Typhloappendicitis, Typhlitis oder Pantyphlitis Behandlungsweisen dieser Zustande werden beschrieben.

SUMARIO

Tiflo-Apendicitis

Un caso de apendicitis aguda presentado en una joven de 18 años, es presentado. Complicationes hicieron una segunda operación necesaria en el tercer dia post-operativo, y una perforación de la base del ciego fué encontrada. Mejoría siguió.

Tiflo-Apendicitis, tiflitis, ó pantiflitis pueden presentarse. Métodos de tratamiento de éstos casos son descritos.

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Venice, Florida
February 11-14, 1940

blood chemistry must be closely watched, especially in regard to chlorides, for those patients who lose a great amount of chlorides through the stomach tube. At frequent intervals analyses of the total chloride content (globular and plasmatic, urea and alkaline reserves) are made.

During the first three postoperative days only water is given by mouth; this, as has been stated, is immediately aspirated. On the fourth day, if everything is well the tube is withdrawn and small quantities of albumin water and tea are given. Twenty-four hours later, the administration of milk is begun, and from the seventh to the eighth day soft food, such as cereals and mashed vegetables, are allowed. All other indications are those prescribed for any ordinary laparotomy case.

We have recommended that, when possible, the patient inhale several times daily a mixture of oxygen and carbon dioxide, with the purpose of preventing pulmonary complications.

COMPLICATIONS

The most commonly observed complications were pulmonary, occurring in 11.8 per cent of all the cases and ranging from mild bronchitis to lung infarct, which may be followed by secondary abscess formation. We think that undue mobilization of the patients and allowing them to strain has much to do with the onset of infarcts. We have reduced the frequency of these with the permanent use of the gastric tube. Formerly we washed the stomach once or twice daily with the large stomach tube, to which the patients objected greatly, this washing being followed by contractions of the muscles of the abdominal wall and diaphragm.

TABLE 1

SYNOPSIS OF 16 DEATHS IN 255 CASES OF GASTRODUODENAL ULCER TREATED BY SUBTOTAL GASTRECTOMY*

No. of Cases	*Complications*	*Comment*
7	Pulmonary	Generally of embolic nature, with infarct; 2 patients died owing to multiple lung abscesses
1	Subphrenic abscess	After multiple lung abscesses patient died 2 months postoperatively
2	Unknown	Dysenteriform diarrhea with high temperature on the 12th postoperative day; hyperthermia on the 2nd day
5	Duodenal perforation	A diabetic patient had perforation of the duodenal stump, dying 32 days after operation with advanced malnutrition; another patient died 2 days after perforation, presenting simultaneously a pulmonary complication
1	Heart disease	A case of advanced syphilis, although well treated; during operation old syphilitic lesions were found in the liver

* A mortality of 6 per cent.

Perforation of the duodenal stump was observed in 4.3 per cent of the patients, 5 of whom died. The others recovered in from fifteen to forty-five days, with no untoward results. This complication is treated by suction and plugging the sinus.

We have had 2 cases with postoperative hemorrhage serious enough to endanger life. In both cases this complication occurred on the second postoperative day. Good hemostasis during the gastro-intestinal suturing is the best prophylaxis, and the bleeding blood vessels should be ligated separately before starting the continuous suture.

Diarrhea was present in 3.1 per cent of the patients when they started feeding, and lasted a few days. This complication is rather difficult to explain.

In our series we have seen 3 cases

Sections of the congress and their chairmen were as follows:

- Biophysics, Gioacchino Failla, D.Sc., New York.
- Genetics, Clarence C. Little, Sc.D., Bar Harbor, Maine.
- Experimental pathology, Dr. William H. Woglom, New York.
- General pathology, Dr. Milton C. Winternitz, New Haven, Conn.
- Surgery, Dr. Frank H. Lahey, Boston.
- Diagnostic roentgenology, Dr. John D. Camp, Rochester, Minn.
- Therapeutic radiology, Dr. Ursus V. Portmann, Cleveland.
- Statistics and education, Dr. Burton T. Simpson, Buffalo.
- General section, Dr. Francis Carter Wood, New York.

Each evening lectures were presented surveying some special field. Included in these lectures was one by Dr. Thomas Parran, Surgeon General, U. S. Public Health Service, Washington, D. C., on "Cancer and the Public Health," and one by Dr. James Ewing, New York, on "Cancer, Present and Future."

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The **Italian National Congress of Obstetrics and Gynecology** will be held in Turin October 15-18. The official topics are gynecologic symptoms of extragenital diseases and ovarian hormone treatment in obstetrics and gynecology.

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A course in balneology will be offered by the **Hungarian Postgraduate Medical Education Committee** in Budapest October 2-8. The program will be sent on request to the committee, Esterhazy-utca 9, Budapest VIII.

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The **International Congress of Americanists** began its twenty-seventh session on August 5 in Mexico City, under the patronage of President Cardenas. Over three hundred students of archeology, anthropology and history were in attendance. Dr. Alfonso Caso, director of the National Institute of Archeology and History, Mexico City, was elected president, and General Cardenas honorary president. T. A. Joyce, lately of the British Museum, and M. Paul Rivet, of the Museum of Man in Paris, were chosen honorary vice-presidents. An excursion was made to the pyramids and the museum at San Juan de Teotihuacan.

The seventh congress of the **Association pour la Documentation photographique et cinématographique dans les sciences** will be held in Paris on October 12 and 13. On the first day members will meet at the Palais de la Découverte and on the second day at the Musée Pedagogique de l'État. Further information may be obtained from Dr. Charles Claoué, 39, rue Scheffer, Paris, 16.

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The fourth international congress under the auspices of the **European Society of Structive Surgery** will be held in Paris October 5-7. Prof. Pierre Sebileau, Paris, is honorary president and Dr. Leon Dufourmentel is president. The subjects chosen for discussion are treatment of deformities resulting from scar retractions of the eyelid and treatment of deformities of the jaw. Other communications will be strictly limited to subjects in plastic and reconstructive surgery. For further information address the secretary of the congress, Maison de Chirurgie, 9 rue de Turin, Paris.

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The twelfth **International Congress of the History of Medicine** was held in Berlin from September 22 to 28, 1940. The chief subjects for discussion were the evolution of medicine in different countries from Harvey to Haller, the epoch of medical philosophers, introduced by Dr. Laignel-Lavastine, professor of the history of medicine in the faculty of medicine of the University of Paris, and the history of typhus, introduced by Professor Zeiss, director of the Institute of Hygiene of the University of Berlin.

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The fourth **Congress of French-Speaking Electroradiologists** will be held in Paris October 11-14 under the presidency of Dr. Louis Delherm. This congress was postponed from October, 1938. Those who wish to attend should send applications as soon as possible to M. le Dr. Dariaux, secretary-general., 9 bis, Boulevard Rochechouart, Paris 9.

emptying time of the stomach. These favorable modifications are obtained in the great majority of the patients when a correct technic is followed during the operation, and the surgeon must keep in mind his purpose in the case of a patient suffering from peptic ulcer.

SUMMARY

The results obtained with partial gastrectomy in 255 cases of gastric and duodenal ulcer are presented. There were 16 deaths, a mortality of 6 per cent. The preoperative treatment, anesthesia, operative technic, postoperative care, complications and favorable end-results are described.

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DISCUSSION

Dr. R. W. McNealy, Chicago: The complications of resection have interested me, particularly recently, because it has been my privilege to confer with a number of my colleagues when they were in difficulty. Probably the greatest number of complications that I see in resections of the stomach arise from the method of handling the duodenum. Whether this is due to a lack of anatomic knowledge of this area, or fear of injuring the common duct, or invading the pancreas or the gastroduodenal artery, I am not sure, and whether it is due to a lack of appreciation of the importance of the peritoneum, enclosing the duodenum, I do not know.

One may venture to say, however, that a rather high percentage of the accidents occur from leakage of the duodenum. In some cases I have seen recently the patient had a fistula following a resection. The character of the contents made it difficult to decide the source of the discharge, but I felt that in the majority of cases the discharge came from the duodenum. When investigation revealed this to be true, it strengthened my belief that the duodenum is the site of the greatest number of leakages.

We are inclined to pay particular attention to the method of suturing the stomach. Hurrying over the duodenum to secure speed deprives us of the safety which should reside in a thorough closure and a careful inspection after it is closed.

Dr. Simon Reisler, Indianapolis: Attention has been called to the subject of complications following insecure suturing, and the hemorrhage which follows suture of the duodenum or the stomach. Dr. McNealy called attention to the fact that at times there is complication of fistula.

I have an exhibit showing a hemostatic improved suture of the stomach and bowel. The suture consists of a combination of reverse crossed loops, which tend to protect the edges of the sutured viscera and to produce better approximation. It has been successful in my hands, and I hope that it will be a factor in producing better security following suture of the stomach and bowel.

It is not dependent on a continuous suture. I use a continuous suture over the clamps, but I take the clamps off and make the suture taut, and use that suture only as a carrier for the hemostatic suture. I put no dependence on the running suture. This is used to hold the tissues together, and a hemostatic suture is used over it, one that goes through and through and back and forth and advances as it goes forward. This is a safer method of closing the duodenum or the stomach. At times I take the ends of this running suture, which I use as a guide, and tie them together, thus infolding the sutured stump.

Dr. Richard A. Leonardo, Rochester, N. Y.: Whenever I go to Europe I visit the Verebely clinic in Budapest, in order to see the assistants doing the gastrectomy. They use a stomach clamp —a mechanical suturing device. They employ a De Petz clamp, and by this means they are able to remove two-thirds of the stomach in thirty-five minutes. I started to do operations on the cadaver there. The cheapest place I know of for this purpose in Europe is in Budapest. For $10 or $15 a day one can do as many cadaver operations as he wishes. With the assistance of a professor and an orderly who acts as a male nurse, the De Petz clamp works well. It saves a great deal of time, but I am fairly convinced that after it has been used for several years the free ends of the clamp do not press the stomach together firmly. All the professors who use these clamps abroad have to fasten a small device on the free end of the clamp, with a thumb screw, turn that screw and tighten the free ends of the jaw of the clamp. Then they insert the removable wheel and turn it toward themselves, and that inserts the silver clips. The clips are stapled one pair at a time, and in inserting them a rod comes out from the back of the machine, so there are three handles projecting. Two rows of stitches are made, 22 clips on each side.

This saves a great deal of time, but I thought of a way of improving the clamp. I noticed that when one cuts between the two rows of clips, often some of the clips do not fit well, the clamp tion's income during 1938 was approximately $7,000,000. In appropriating $15,000,000 it was necessary, therefore, not only to use up the balance carried over from earlier years, but to use $3,755,000 from the principal fund In carrying out its 1938 program the Foundation operated in forty-two countries in all parts of the world Eighteen of these countries were in Europe five in Asia, two in Africa, five in South America and ten in North and Central America and the West Indies, two were islands of the Pacific Twenty-five per cent of the money given went to foreign countries, and the remainder, seventy-five per cent, was for work in the United States

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In commemoration of the eleventh anniversary of the death of **Dr. Hideyo Hoguchi,** of the Rockefeller Institute for Medical Research, in Accra, West Africa, where he had gone for work with yellow fever, a memorial hall was dedicated at his birthplace in Okinajima, Japan.

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Prof Joseph Rigney D'Aunoy, professor of pathology and bacteriology at the Medical Center of the Louisiana State University, has been decorated with the Order of Commendatore of the Crown of Italy "in recognition of his achievements in the fields of medical research and education." Until his recent resignation, Prof D'Aunoy was dean of the Medical Center.

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Dr. Gerald B. Webb received the Trudeau Medal of the National Tuberculosis Association during the annual meeting of the society in Boston, in recognition of his attempts "to produce specific immunity against tuberculosis by the inoculation of animals with very minute numbers of tubercle bacilli." Dr. Webb is research director of the Foundation for Research in Tuberculosis at Colorado Springs.

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Dr W. G. Barnard, consultant histologist of the Public Health Department of the London County Council, has been appointed to the chair of pathology of the University of London, tenable at St. Thomas's Hospital Medical School.

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Sir Harold Beckwith Whitehouse, Birmingham, was chosen president of the British Medical Association at the annual meeting in Aberdeen, and Dr Thomas Fraser was installed as president Sir Ernest Kay Le Fleming, Wimborne, chairman of the council for several years, was elected a vice-president. The Association will meet in Birmingham next year.

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The Royal College of Physicians has made the following awards. the **Baly Gold Medal to Dr. C. H. Best,** professor of physiology in the University of Toronto, for his physiological research; the **Moxon Gold Medal to Sir Arthur Hurst,** senior physician to Guy's Hospital, for his research and observations in clinical medicine; and the **Weber-Parkes Medal and Prize to Sir Pendrill Varrier-Jones,** founder and medical director of the Papworth Village Settlement, for his work on tuberculosis.

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Dr. Vernon L. Hart, of Minneapolis, was awarded the **annual gold medal** of the Southern Minnesota Medical Association for the best scientific exhibit at the Minnesota State Medical Association. Dr. Hart is an instructor in the University of Minnesota Medical School.

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The hundredth anniversary of the presentation of the daguerreotype process of photography to the French Academy by **Louis Jacques Daguerre,** father of photography, was commemorated on August 17 at the Eastman Kodak Building at the World's Fair with the opening of an exhibition of daguerreotype equipment. This included a camera operated by Charles H. Tremaine, the only daguerreotypist in the United States. An original daguerreotype by Daguerre, an 1837 photograph, which is the earliest existing still-life, was on exhibit. There was also an 1845 daguerreotype panorama of Niagara Falls.

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The Committee for the Celebration of the President's Birthday reported August 10 to President Roosevelt that the 1939 drive for funds to aid in fighting **infantile paralysis** netted $1,329,100. The **National Foundation for Infantile Paralysis, Inc,** organized this year on a nation-wide basis, will administer the fund. Half of the money is to be used for research and the remaining half will be sent to local chapters. The largest part of the proceeds of the drive came from the birthday balls and other events held January 30. The "March of Dimes" campaign raised $217,602.28. Other cor [illegible] to $96,971.58.

TYPHLO-APPENDICITIS*

COLONEL JULES VONCKEN, M.D., F.I.C.S.
Service de Santé, Belgian Army
LIÉGE, BELGIUM

THE complications which may occur after appendicectomy are well known and have been fully described. I believe, however, that the complications which may arise from the infection of lymphoid tissues at the base of the cecum have rarely been mentioned. In fact, in certain cases, the infection is not limited to the appendix proper but invades the entire surrounding area of the appendicular implantation in the cecum and thus gives rise to complications which must have been present before the removal of the diseased organ.

A case of this kind is herewith reported because its dramatic development and the operative findings attracted my attention to this pathologic phenomenon which we might term "typhlo-appendicitis."

CASE REPORT

A young girl of 16 was referred to our clinic because of symptoms of acute appendicitis of six or seven hours' duration. The diagnosis was unmistakable and we operated immediately, removing an appendix definitely inflamed and turgescent. Appendectomy was done with cauterization after ligature, without inversion of the stump.

The operative sequelae were most dramatic. The first day the temperature remained at 38.2° and the pulse at 120. The second day, vomiting set in; abdominal palpation elicited pain, especially in the right iliac fossa. At the end of the second day, we realized that we were dealing with a severely acute appendicular situation.

The morning of the third day, after a very definite exacerbation during the night, the pain had somewhat subsided, but the pulse had become more rapid; the facies were shrunken. We suspected peritonitis and decided to drain the peritoneum. When the original incision was re-opened a sanious, fecaloid fluid escaped. We had the impression that the ligature had slipped and that this accident had induced the peritoneal infection. We exposed the cecum, brought it to the surface and found the ligature of the appendicular stump intact; but there was a circular perforation in the center of the base of the cecum, about one centimeter from the appendicular stump. We closed and deeply invested this perforation. We inserted a Mikulicz drain which was removed on the eighth day. Recovery with slight eventration followed.

COMMENT

Study of this case has attracted our attention to the pathology of acute complications which may develop in the ceco-appendicular region. This patient, who presented an unforeseen complication, actually underwent two successive attacks at an interval of 48 hours, presenting each time the clinical picture of acute appendicitis. Removal of the diseased appendix did not eliminate the infection, which, instead of being localized in the appendix, actually extended beyond the point of its implantation in the cecum. The operative procedure could not eliminate the infection, which, instead of being localized in the appendix, actually extended beyond the point of its implantation in the cecum.

Thus we observed the development of a case of acute perforative appendicitis occurring after the removal of the appendix. We were actually dealing with a case of typhlo-appendicitis. It is to this different entity of appendicitis that I wish to call attention because it develops differently and requires a surgical procedure quite different from that employed for an uncomplicated case of appendicitis.

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* Read at the Scientific Assembly of the International College of Surgeons, New York, May 23, 1939.

fields of philosophy economics and statesmanship.

In the field of scientific medical organizations Dr. Charles H Mayo was president of the Western Surgical Association in 1904 the Minnesota State Medical Association in 1905, the Society of Clinical Surgery in 1911, the Clinical Congress of Surgeons of North America in 1914, the American Medical Association in 1916, the American College of Surgeons in 1924, the American Surgical Association in 1931 and the Minnesota Public Health Association from 1932 to 1936

Many of the greatest universities in the world conferred honorary degrees on him Thus the master of arts degree was conferred by Northwestern University in 1904, fellowship in the Royal College of Surgeons in England in 1920 and in the Royal Society of Medicine in 1926, and master in chirurgery by Trinity College of Dublin in 1925 He was made doctor of public health by the Detroit College of Medicine and Surgery in 1927 and doctor of science by Princeton University in 1917, the University of Pennsylvania in 1925 and the University of Leeds in England in 1909 He also received the honorary degree of LL D from the University of Maryland in 1909, Kenyon College in 1916, Northwestern University in 1921, the University of Edinburgh in Scotland in 1925, Queen's University in Belfast, Ireland, in 1925, University of Manchester in England in 1929, Hamline University in 1930, and Carleton College in 1932

A number of great nations also honored him with citations for distinguished service, the record including officier de l'Ordre national de la legion d'honneur, France, 1925; officier de l'Instruction publique et des beaux-arts France, 1925, and Cross of Knight Commander of the Royal Order of the Crown of Italy, 1932, as well as citations from many other countries

During the World War he and his brother, Dr. William J. Mayo, alternated between Rochester, where they maintained graduate study for physicians entering the service, and the personnel department in Washington They served also as consultants in surgery Dr Charles H Mayo was commissioned Major on April 19, 1917, Colonel June 15, 1918, and Brigadier General Nov 22, 1921 He received the distinguished service medal of the United States Army on June 7, 1920 With Dr William J. Mayo he was cited for distinguished service by the National Organization of the American Legion and presented with a commemorative plaque, the special ceremony being conducted by President Franklin D Roosevelt in person in 1934

The list of his membership in distinguished civic and medical organizations, both American and foreign, is far too long to list To many of these he gave personally of himself and of his advice; in others he held honorary membership only He gave also freely of himself and of his work to many scientific and general publications. He served as health officer of the city of Rochester since May 1, 1912, and as a member of the school board of that city from 1915 to 1923. . . .

Dr Charles H. Mayo was widely known not only as a surgical genius, as a great surgical teacher, as an inspired organizer, as a leader in medical advancement and as a citizen of his city, county, state and of the nation, but also as a warm hearted, genial, faithful, true humanitarian, easily approachable, unostentatious, ready to trade his wits and banter, always in the most kindly and sympathetic manner Such men come but infrequently in any civilization and their places are not easily filled as the world moves on.

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Dr. William J. Mayo, former President of the American Medical Association, recognized throughout the world as a brilliant surgeon, a great organizer, an esteemed leader in the field of medicine, died at his home in Rochester, Minn., July 28, aged 78, an operation for perforating ulcer of the stomach had been performed April 22. But a few months have passed since the death of the younger of the two brothers, Dr Charles H Mayo Their careers were inseparable. Their passing from this life so closely together was no doubt as they themselves might have wished it

The career of Dr William J. Mayo will be fully recorded in many biographies in which space will be available for proper consideration of its many facets Since the sixteenth century, the Mayo family has been one closely associated with science. The father of the two boys, Dr William Worrall Mayo, was born in Manchester, England, May 31, 1819, after training as a physicist and chemist he came to the United States in 1845. In 1847 he removed to Lafayette, Ind, where he studied medicine with Dr. Eleazar Deming He then completed his medical studies in the University of Missouri and graduated in 1854 After practicing briefly in Laporte, Ind Dr William Worrall Mayo removed to Minnesota, settling eventually in Rochester in 1863, where he was in charge of the draft board during the Civil War The father of these boys was himself a competent surgeon, one of the first physicians in the West to use the microscope, founder of the Minnesota State Medical Association and its president in 1873 Dr. William Worrall Mayo died in Rochester in 1911 He and Mrs. William Worrall Mayo had three daughters and two sons The elder son, William James Mayo, was born in LeSuer, Minn, June 29, 1861 The famil removed to Rochester when he w 1½ years old. The boy attended cecum is edematous; a greenish gelatinous secretion covers all the affected tissues; the appendix is necrotic and adheres closely to the ileum or the mesentery. We cannot hope to remove this infected mass. Simple appendicectomy is insufficient because this would be followed by two dangers—persistence of the infection and possibly a secondary mesenteric hemorrhage. Only a single procedure is possible after the appendicectomy. Despite the danger of postoperative eventration, a large Mikulicz drain assures control of the infection and of possible hemorrhage. This is our practice and it is the only procedure which offers hope of recovery.

CONCLUSIONS

This clinical study requires further histological confirmation. The operative findings should be confirmed by the presence of obstructed follicles and lymphoid organs similar to those of the wall of the appendix. Such a study, which requires the examination of numerous histological sections, is under way, and I hope to be able to publish the findings in the near future.

SUMMARY

A case of acute appendicitis occurring in a girl, aged 18, is reported. Complications made a second operation necessary on the third postoperative day, when a perforation of the base of the cecum was found. Recovery followed. Typhlo-appendicitis, typhlitis, or pantyphlitis may occur. Methods of treatment of these conditions are described.

DISCUSSION

DR. JAMES A. GETTINGS, New Haven, Conn.: I think complications would be greatly lessened if an early diagnosis were made. I always drain, and I always invert the appendix. One feature that has interested me very much is the complication of embolism. I read an interesting paper some years ago on the probable explanation of some of the causes for this condition following acute appendicitis. The nurse, wishing to do all she can to aid the comfort of the patient, sometimes resorts to vigorous massage, which could well initiate a thrombosis, followed by a fatal embolism. Greater dependence should be placed on physical rather than laboratory findings in all cases of acute appendicitis, whether or not diagnosis is made early.

DR. FELIX CUNHA, San Francisco: The question of whether to drain or not to drain or whether to invert or not to invert could be discussed all day and all night. Each surgeon has his own opinion, based on personal experience, and, after all, one expresses one's individuality in doing surgery. One should not have any set rules or formulas and should adapt oneself to the case at hand.

With regard to inversion, that depends entirely on the condition of the wall. If there is a good, noninflammatory area, one may invert; but if there is a great deal of inflammation one is likely to get into more trouble by inverting, with probably a residual abscess.

As to the question of the complication of embolism, I wonder if this cannot be avoided in very bad cases, in which pus is present in large amounts, by going up a bit, where the appendiceal vein enters, and possibly interrupting the path of embolism.

DR. ANDRÉ CROTTI, Columbus, Ohio: Complete resection of the cecum should be done only rarely. I have had to resort to that, but the condition was no longer acute appendicitis; it was subacute and protracted and had produced massive involvement of the cecum and massive attachment of the adjoining loops of bowels, causing obstruction.

DR. VONCKEN: Some surgeons still follow the method of not draining, even after perforation. That is entirely incomprehensible to me. Also, I feel that the appendix should not be left behind. My practice is to remove it, because I feel that even after marked perforation few or no complications will follow removal of the appendix.

RÉSUMÉ

Typhlo-appendicite

L'auteur rapporte un cas d'appendicite chez une jeune fille de 18 ans. Le troisième jour apres l'operation, des complications survinrent et, demandèrent une seconde intervention. Il y avait une perforation du coecum la malade se retablit. La typhlo-appendicite la typhite, et la pérityphlite peuvent gress of American Physicians and Surgeons, and of the Inter-State Postgraduate Medical Association of North America.

During the World War he was commissioned Major in the Medical Reserve Corps on April 9, 1917, and Colonel of the Medical Corps of the National Army on June 15, 1918. He served as chief consultant for all surgical services during the period of the war and was stationed in the office of the Surgeon-General in Washington He was commissioned Brigadier-General in the Reserve Corps in 1921 and since then has served at various times as consultant in surgery to the War Department.

His memberships in medical organizations, in military organizations and in civic bodies were far too numerous even for listing. Most of the important foreign medical societies of the world had elected him an honorary member.

His contributions to medical literature, previously mentioned, were well beyond 300 in number, beginning with a report of an operation for ovarian tumor and covering many phases of medical and surgical science, a wide variety of commencement and honorary addresses, a number of descriptive letters of travel and philosophic contributions to the problems of our day.

In 1915, Drs. William J. and Charles H. Mayo donated $1,500,000 to establish the Mayo Foundation for Medical Education and Research in Rochester in affiliation with the University of Minnesota. In 1919 the brothers formed the Mayo Properties Association to hold all the properties, endowments, and funds of the Mayo Clinic to insure the permanence of the institution for public service. Again in 1934 the Mayo Properties Association presented a gift of $500,000 to the University of Minnesota, making a total of $2,800,000 that the brothers had given to the Mayo Foundation. In sending this contribution, Dr. William J. Mayo wrote, in part:

> "Our father recognized certain definite social obligations. He believed that any man who had better opportunity than others; greater strength of mind, body, or character, owed something to those who had not been so provided; that is, that the important thing in life was not to accomplish for oneself alone, but for each to carry his share of collective responsibility . . . The fund which we had built up and which had grown far beyond our expectations had come from the sick, and we believed that it ought to return to the sick in the form of advanced medical education, which would develop better-trained physicians, and to research to reduce the amount of sickness . The people's money, of which we have been the moral custodians, is being irrevocably returned to the people from whom it came. . . . The practice of medicine in Rochester is carried on in the same manner as by other members of the regular medical profession throughout the state and nation. All classes of patients, without regard to race or creed, social or financial standing, receive necessary care without discrimination. . . ."

These words reflect the great character, the human kindliness, the profound human sympathy that were the part of Dr. William James Mayo. It has been said that opportunity and great occasions make great men. Exception to this rule is present in the lives of Drs. William J. and Charles H. Mayo They made a small village into one of the most notable medical centers of the world wholly through a genius for surgery and for medical leadership. Throughout their careers they devoted themselves to the advance of scientific medicine and of the medical profession which they served so nobly and which gloried so greatly in their achievements.

In 1906, when Dr. William J. Mayo read his presidential address to the American Medical Association, he forecast and considered some of the great problems that concern medical practice today He attacked abuses of medical care by public service corporations and the abuse of medical charity by those able to pay. He condemned all attempts by those not trained in the science and art of medicine to dominate its functions To the very end he contended for this point of view And in a note written just a few days before his death, he urged continued work for the advancement and stabilization of medical science and the traditions of medical practice.

All the world pauses in the midst of its turmoil and stress to give him honor and to pay him in his death the tribute that is so justly his due—a great physician, a superb surgeon, a magnificent leader, a beloved man!

(J A M A)

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Prof Karl Sudhoff, noted German medical historian, died Oct 8, 1938, at the age of 85

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Prof. E. C van Leersum, Dutch medical historian, died Feb 15, 1938 aged 76

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Prof. Marcel Labbé, noted Paris clinician, died in May 1938

Meetings and Congresses

HARLOW BROOKS MEMORIAL CONFERENCE

Dr. Charles H. Arnold, executive secretary of the scientific section of the United States Assembly, addressed the fourth Harlow Brooks Memorial Navajo Clinical Conference held August 28-30 at Ganado, Arizona. His subject was "Treatment of the Ruptured Appendix."

Dr. George W. Crile, of Cleveland, spoke on "The Antithetic Influence of Reason and Emotion in the Genesis of Coronary Disease and Hypertension. The address was divided into two sections, Part I, "The Mechanism of Reason and Emotion," given August 28, and Part II, "Clinical Application of Findings," given August 30.

Others scheduled to speak and their subjects were Dr. Joseph M. Greer, Phoenix, Arizona, who presented bone and joint cases; Dr. Ray M. Balyeat, of Oklahoma City, Oklahoma, "Diagnosis and Treatment of Common Allergic Manifestations Encountered by the General Practitioner" and "Diagnostic and Therapeutic Value of the Use of Iodized Oil in Chronic Asthma and Bronchiectasis"; Dr. Alfred E. Gallant, of Los Angeles, "The History and Treatment of Acute Fractures of the Femoral Neck"; Dr. Robert Stanley Flinn, of Phoenix, "The Treatment of Cardiac Irregularities"; Dr. Phil W. Shumaker, of Los Angeles, "Intra-Gastric Photography"; Dr. E. Forrest Boyd, of Los Angeles, "A Doctor Looks at Medicine Around the World Through Colored Movies"; Dr. John G. Hayden, of Kansas City, Missouri, "The Treatment of Varicose Veins"; Dr. Max Thorek, of Chicago, "Advantages of Electrosurgical Obliteration of the Gall Bladder Over Classical Cholecystectomy."

Others were Dr. E. Payne Palmer, of Phoenix, Arizona, "Early Diagnosis and Radical Treatment of Caricnoma of the Colon"; Dr. William E. Branch, of Los Angeles, "Gastric Resection"; Dr. Thomas G. Orr, of Kansas City, "The Treatment of Fresh Wounds and Wound Healing" and "The Management of Acute Intestinal Obstructions"; Dr. Carl Rusche, of Los Angeles, "Injury of the Ureter, Including Surgical, Intraureteral Instrumentation, External Violence and Foreign Bodies, with a Report of Fifty Cases"; Dr. Charles A. Thomas, of Tucson, Arizona, "Extrapleural Pneumothorax in Tuberculosis"; Dr. J. H. Patterson, "Gall Bladder Subserous Dissection and Lipidol Injection of the Common and Hepatic Ducts"; Dr. E. Forrest Boyd, "Pneumonia"; Dr. Frank R. Teachenor, of Kansas City, Missouri, "Surgical Relief of Intractable Pain"; Dr. William H. Daniel, of Los Angeles, "Cancer of the Rectum"; Dr. W. Warner Watkins, of Phoenix, "The Correlation of Clinical and Roentgenological Evidence in Chest Diseases"; Dr. Charles W. Sechrist, of Flagstaff, Arizona, "Nursing Problems in Small Hospitals"; and Dr. E. A. Campbell, of Gallup, New Mexico, "Differential Diagnosis in Gastric Carcinoma."

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American Congress of Physical Therapy

The eighteenth annual session of the **American Congress of Physical Therapy** was held at the Hotel Pennsylvania, New York, September 5-8. The formal opening of the congress took place on the evening of September 5, with addresses of welcome by Drs. Terry M. Townsend, New York, president of the Medical Society of the State of New York; Farel Jouard, New York, president, New York Physical Therapy Society, and Benjamin Ulanski, Philadelphia, president, Pennsylvania Therapy Association.

Dr. William H. Schmidt, Philadelphia, made his official address as president on "The Future Development of Physical Therapy." Other speakers included Drs. Bayard T. Horton and Frank H. Krusen, Rochester, Minn., on "An Evaluation of Methods and Mechanical Devices for Producing Increased Blood Flow in the Extremities;" Horatio B. Williams, New York, on "Radio Interference by Electric Apparatus," and Russell L. Cecil, New York, on "Physical Therapy as Compared with Other Forms of Therapy in Arthritis."

The section on eye, ear, nose and throat held sessions September 6 and 7. The general scientific session on September 7 was devoted to a symposium on fever therapy.

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The **Third International Cancer Congress** was held in Atlantic City, N. J., September 11-15, at the Haddon Hall Hotel under the presidency of Dr. Francis Carter Wood, New York.

and chat over the details of every phase of the Association's activities, until it was time to return home for dinner. Many of his thoughts and words on his death-bed were of the Association and of his own love for it.

Space makes it impossible for us to dwell on other of the many activities which engaged Dr. New's attention and to all of which his help was invaluable. It was only during his last weeks that he accepted the post of Secretary to the Council on Medical Missions New's life was short, but, if time is to be measured not by years but by work, it was longer than many others of twice his age.

Dr. New was a keen Mason and took a prominent position in that body. He was a Member of Scottish Rites Bodies, Shanghai, Member of Islam Temple, A.A.O.N.M.S., San Francisco; Life Member and Founder of Amity Lodge, No. 106, A.F.&A.M., and Founder and Member of Nanking Lodge, No. 108

Intensely loving himself New was loved by all, especially by his own immediate colleagues, and when his condition required blood transfusion, as latterly it did on a number of occasions, there was no lack of volunteers to render him this service.

He died on May 4, 1937 and was buried in the International Cemetery, Shanghai. The funeral service, attended by several hundred of his many friends, was held at the Funeral Directors on May 11, and he was buried that afternoon with Masonic rites.

Of the many tributes to the memory of Dr Way Sung New none is finer than that adopted by the Council on Medical Missions which we should like to quote in full

> "Deeply conscious of its loss in the death of its Secretary, Dr. Way Sung New, the Council on Medical Missions of the Chinese Medical Association desires to record its tribute of appreciation for his devoted life.
>
> "Though Dr. New commanded our respect for the distinguished professional position he had attained, he was beloved of us all for something far deeper. He was a constant follower of that Master who 'Came not to be ministered unto, but to minister.' Direct and frank in speech and action, he was always full of grace and kindness.
>
> "To no other physician belongs more credit for the vision and energy that resulted in the amalgamation of the National Medical Association and the China Medical Association into a single body, the present Chinese Medical Association Both as the first president and, later as Executive Secretary of that body, he was constantly concerned for the work of this Council and for all forms of Christian medical work in China.
>
> "This concern was so deep that, in spite of increasing ill-health, he accepted the Secretaryship of this Council only a month before his death, believing that the time had come for a Chinese Christian physician to enter this field of service, and that it was his own duty to undertake the task.
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> "Even though he was not able to render active service in the Council, he thought and spoke of its needs repeatedly during the last weeks of his life, conscious that it was the agency which should be used for linking the Christian Hospitals to the Christian Church as well as to the health programs of the constituted authorities.
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> "To Mrs. New, their son and the other members of Dr. New's family we express our deepest sympathy. We rejoice that we can join with them in gratitude to God for the fragrant memory of his life and for the inspiration to Christian living that he has left us all."

J. L. M.

AN APPRECIATION

China has lost a great human personality. The death of Dr. Way Sung New at his home in Shanghai early on the morning of May 4 removes from leadership. not only a man influential in medicine, but one who was a man of vision and courage in all human relationships.

Born in Shanghai on June 14, 1892, son of the late Shangshow New, an early Chinese student sent to America, Dr. New was always associated with the life of this city. He graduated from St John's Middle School in 1907, received his A B. Degree at St John's in 1910, and his M.D. at Harvard Medical School in Boston in 1914. In 1915-16, he taught anatomy at the Harvard Medical School of China in Shanghai, then returned to the United States for further training in several hospitals.

It was at this time that he received his early impulse to take up orthopedic surgery. He was orthopedic assistant and house surgeon in the Massachusetts General Hospital 1917-18, and continued in this field at Johns Hopkins Hospital, returning to take charge of orthopedic surgery at the Peiping Union Medical College for two years, 1918-20.

SERVICE OF THE CRIPPLED

No more significant page is to be found in Dr New's own diary than that which described his determination to invest his life in the service of the crippled in China. In his own words, "I was visiting Nanking one day, and while I was going through a certain hospital, I saw eight or ten men and women in different wards who were apparently cripples. 'What are you doing with

News and Personals

Publication of **"Revista de Medicina y Cirugia,"** monthly organ of the Neoleonés Syndicate of doctors and surgeons, has been begun in the city of Monterrey.

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For the purpose of presenting diplomas of Fellowship to members of the **Mexican Chapter of the International College of Surgeons,** a brilliant reception was held August 26 in the Quinta del Lago, sumptuous residence of Dr. Abraham Gonzalez, F.I.C.S.

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Mexican scientific societies unite in the celebration of the third centennial of the death of the noted Mexican, **Don Juan Ruiz de Alarcon,** whose genius shone in the Century of Gold for the glory of Castilian letters; the great classicist died in Madrid August 4, 1639, and his remains lie in the parish of St. Sebastian of that city.

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September 3-8 the third **medical week** organized for the Neoleonés Syndicate of doctors and surgeons took place in the city of Monterrey.

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On August 10 the clinic and sanatorium of orthopedic and traumatic surgery of Dr. Alfonso Ortiz Tirado, F.I.C.S., was opened.

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New officers of the American Physicians' Art Association who took office July 1 include **Drs. Henry N. Moeller,** New York, president; **Edward E. Woldman,** Cleveland; **Herbert L. Treusch,** Atlanta, Ga., and **Alfred Braun,** New York, vice-presidents. **Dr. Raleigh W. Burlingame,** San Francisco, is treasurer; **Drs. Max Thorek,** Chicago, and **Francis H. Redewill,** San Francisco, are recording and corresponding secretaries, respectively. The next exhibition of the association will be during the Annual Session of the American Medical Association in New York June 10-14, 1940.

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Arnold F. Emch, Ph.D., has resigned as executive director of the Chicago Hospital Council to become assistant secretary of the American Hospital Association.

The **Ophthalmic Institute of Puerto Rico,** established in 1937 by **Drs. Luis J. Fernandez-Garcia** and **Ricardo F. Fernandez** in San Juan, recently moved into a new building in Puerto de Tierra, near San Juan. The new institute, built at a cost of about $70,000, has four floors. On the first floor are the offices; on the second, private rooms and an operating suite; on the third, wards; and on the fourth, living quarters for the resident staff. In the basement is a dispensary. **Dr. Luis J. Fernandez-Garcia,** a graduate of the University of Maryland School of Medicine in 1917, is director and chief surgeon. **Dr. Ricardo F. Fernandez,** a graduate of George Washington University School of Medicine, Washington, D. C., in 1931, is assistant surgeon.

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On July 1 there was opened in the town of San Angel, Federal District, **a new center of experimental therapeutics;** this institution bears the name of E. von Behring.

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Dr. Percival Bailey, professor of surgery and neurology, Department of Medicine, University of Chicago, has been appointed professor of neurology and neurological surgery at the University of Illinois College of Medicine.

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Dr. Margaret E. Lewis, formerly of the Johns Hopkins University, has joined the staff of the new Crocker Radiation Laboratory of the University of California. She plans to undertake an investigation of the effect of neutrons on tissue cultures.

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Work of the Rockefeller Foundation in 1938.— A review of the work of the Rockefeller Foundation by Mr. Raymond B. Fosdick, president, shows that during 1938 the Foundation appropriated a total sum of over $15,000,000. Of this amount, speaking in terms of rough classifications, $3,800,000 was given to the medical sciences, $3,800,000 to the social sciences, $3,000,000 to the natural sciences, $2,500,000 to public health, $1,000,000 to the humanities and $300,000 to rural reconstruction in China. The Founda-

The funeral service was held at the International Funeral Directors at Kiaochow Road, on May 8, at 2 p.m. The first part of the service was conducted with the full Masonic ceremony and the second part conducted by one of the Christian pastors of Shanghai.

E H HUME.

We are indebted to Dr. Szeming Sze for the following:

Twenty-two years ago, soon after his return from America, Way Sung New organized the National Medical Association of China, acting as the Secretary of the First Conference, which was held in Shanghai and was attended by some forty members. Seventeen years later, his efforts to unite the National Medical Association and the China Medical (Missionary) Association were crowned with success, he himself being elected first President of the amalgamated body, henceforth to be known as the Chinese Medical Association. One month ago, as many will remember, he participated actively in the Fourth General Conference of the Chinese Medical Association in Shanghai, which was attended by over one thousand delegates. Between his first Conference twenty-two years ago and his last only one month ago, he has consistently played the leading part in this steady growth of the Association, which he has fostered and guided in accordance with the high ideals that have characterized all his acts Indeed, so much was the work of the Association a part of his life that the history of the Association in those years is the history of his life. He had the work of the Association so much at heart that almost at every hour of the day and night he was thinking of the Association.

Giving his services freely and unselfishly, even to the detriment of his health, he has borne the heaviest responsibilities during the most important years of the Association's history As President of the newly-created Chinese Medical Association, he guided the Association through the difficult period of its infancy. Later, as Chairman of the Executive Committee, he brought to a glorious conclusion the financial campaign which resulted in the Association being able to purchase its own property. During his recent tenure of office as General Secretary,—a post which he nobly undertook in order to train up younger men for future responsibilities—he established with conspicuous success the Sales Department, the work of which he directed with characteristic energy and enthusiasm. Still more recently he agreed to undertake the duties of Secretary of the Council on Medical Missions, in which work he sought to interest more Chinese doctors. But, his work was not limited to any single office which he might be holding. He was interested in every phase of the Association's work, and was ever ready to offer all the assistance at his disposal Many delegates at the last Conference will remember his and Mrs. New's generous hospitality when they placed the accommodation of the Orthopedic Hospital at their disposal. Many a time has his private car been used for Association errands, and whenever there was need of equipment (such as surgical tables for the Anti-Venereal Clinic or refrigerator for the Sales Department), he would insist on the Association borrowing these from his hospital to avoid unnecessary expenditure.

He loved the Association and he loved to visit the Association Building. He used to come regularly in the afternoon about four o'clock, even when there were no formal meetings, to sit and chat over the details of every phase of the Association's activities, until it was time to return home for dinner. He had a special gift for all matters connected with building and carpentry, and invariably he would on his regular tours of inspection make some excellent practical suggestion for the structural improvement of this or that feature.

He literally gave his life for the Association he loved so dearly. He exhausted himself in visiting various local branches in 1931, to persuade them to cooperate in the union of the two associations. Refusing to spare himself in the heavy work of preparing for the Nanking Conference in 1934, he contracted then the tonsillitis which later caused complications of nephritis, with its continuous impairment of his health thenceforth. On March 28, 1937, two days before the last Conference, feeling that his health was failing, he wrote his will and at the same time asked to be allowed to enjoy unhindered and to his heart's content all the activities of the Conference as he wanted. To the anxiety of his many friends, he insisted on taking an active part not only in the various business meetings, but also in many social functions. He was particularly interested and happy to see the development of autonomous societies within the Association, and he was unanimously elected the first President of the new Chinese Surgery Society. One event which made him particularly happy was the successful inauguration of the Chinese Pediatrics Society as a Section of the C. M. A. on the evening of April 4, in which he played a decisive role; he was so happy that he came immediately to my house "to tell the good news," although it was after 11 p.m.! The last visit he ever paid was to call at my house in the late afternoon on Sunday, April 11, to discuss some matters connected with the welfare of the C.M.A. staff. That night he awoke suddenly with a rigor and high fever—the beginning of his final il' In t' remaining three weeks—almost to kept speaking of the Association, as

Obituaries

C. H. Mayo

W. J. Mayo

Charles Horace Mayo, noted as a surgical genius, a great medical administrator and a genial physician, died in Chicago of pneumonia, May 26. The younger of the two world-famed Mayo brothers was born in Rochester, Minn., July 19, 1865, the son of William Worrall Mayo and Louise Wright Mayo. After an education in the Rochester high school and at the Niles Academy he attended Chicago Medical College, later known as Northwestern University, and received his degree in medicine in 1888. As a young boy he began, almost from childhood, to live in a medical atmosphere and to become inspired toward medicine as a career. After his graduation in medicine he returned to Rochester, where his urge toward research and his surgical genius led to innumerable investigations in medicine and in surgery. His first published statement was a joint contribution with his brother, Dr. William J. Mayo, entitled "Report of Clinic in St. Mary's Hospital, Rochester, Minnesota, January 19, 1891," which was published in the *Northwest Lancet* in November of that year. From that time on hardly a year passed without a contribution by either Dr. Charles H. Mayo alone or with his brother, or with some of the younger men who soon became attracted to them. These contributions cover every phase of medicine and surgery and in later years embrace as well the

Book Reviews

Research in Medicine. By Sir Thomas Lewis, C.B.E., F.R.S., F.R.S.E., M.D., D.Sc., F.R.C.P., Physician in charge of Department of Clinical Research, University College Hospital, London. Price, $2.50. Pp. 79 London: H. K. Lewis & Co., Ltd., 1938.

THIS is a collection of five essays delivered by Sir Thomas Lewis before the British Medical Association, The Royal College of Physicians, The University of Birmingham and the Royal Society. With an excellent training he has devoted more than 30 years to teaching and Clinical Research at the University College Hospital, the results of which are known throughout the world, so that he is qualified to discuss frankly the foundation upon which the profession must stand. His theme is based upon the steadily widening recognition that Clinical Science, besides using for its purposes knowledge derived from physiology and other kindred Sciences, has itself a fundamental contribution to make to Medical Science as a whole "The inescapable truth is that to cure or to alleviate human disease, research must begin and end in direct studies of sick people. It is palpably clear that physiology, alone and unaided, would be sterile for medicine, it is union of all branches of medical science that gives medical investigation irresistible strength to proceed Physiologists have to face the fact that the large majority of the students who pass through their hands will encounter in their daily work problems far harder to solve than those with which they themselves deal in their laboratories"

The Science of Medicine was given a legal status in 1140, when Roger II of Sicily issued an edict forbidding any one to practice medicine without proper examination. Surgery was recognized as a specialty when Roger's grandson, Hohenstauffen Emperor, Frederick II, in 1224 issued an edict requiring the candidate to have studied logic three years and medicine and surgery for five years, and to have practiced for one year under some experienced physician. The candidate in surgery had to give evidence that he had studied the art for at least a year, and particularly that he had studied human anatomy, without which no incision can be safely made or any fracture treated. (Translated by J. J. Walsh, *The Popes and Science*, New York, 1908.)

C E Black (Trans West. Surg. Assn, 1935), in a study titled *Our Specialists*, found that only three subdivisions were made in the sixteenth century; 11 more were added in the seventeenth century and six in the eighteenth century. Only 25 of our specialists were born before 1800; all the others, 120, came after that date. Billroth wrote (*Lehren und Lernen der Medizinischen Wissenschaften*). "It is scarcely to be expected that any of the specialties can satisfactorily occupy a talented man for life."

C C Burlingame, J A M.A., p 379 (July 29) 1939, expresses the trend of our time, "In fact, I think the day is coming when we shall stop talking about 'mental disease' and 'physical disease' because I am convinced it is an artificial and wrongful separation The human organism becomes ill, and one cannot separate the human organism into separate entities any more than one can consider it apart from its environment.

In the History of Surgery we have John Hunter, Lord Lister and William Stewart Halsted who followed the tradition established by William Harvey Every surgeon has an opportunity to study physiology and pathology in sick people. The reviewer feels that this book should be read by every young surgeon to inspire him in his work in the clinic, autopsy room, experimental laboratory and library.

The Clinic of Sir Thomas Lewis has become famous throughout the world during the past 15 years and is based on a tradition established by William Harvey, a tradition that clinical science shall not be confined narrowly or by artificial boundaries, but shall be free to search how and where it will; a tradition which will not countenance attempts to separate the study of health from the study of disease or of man, or work at the bedside from that of laboratories

W J Carson

Orthopedic Appliances By Henry H Jordan, M D Pp. 412, with 377 illustrations New York, London and Toronto, Oxford University Press, 1939

THE author is to be praised for his splendid presentation of a subject that has been sadly neglected in this country. His practical suggestions, which are divided into groups based in Rochester and the high school and thereafter spent one year in a private school for languages and science and two years in Niles academy, During their youth, both William and Charles accompanied their father on his rounds and had an opportunity to observe both surgical operations and postmortem examinations. For a time, both clerked in the drug store. With their father they learned to use the microscope. In 1880, William J. Mayo went to the University of Michigan, Ann Arbor, and completed a three year course which had just been established to replace the former two year medical course. In his medical education Dr. William J. Mayo had an opportunity to be associated with the anatomist Ford and with Victor C. Vaughan, and his training in surgery was under Donald McLean, then professor of surgery. When he was 22, Dr. William J. Mayo completed his medical studies in the university and received his degree.

In November 1884, one year later, Dr. Will married Miss Hattie M. Damon of Rochester. Through many years the close association of Mrs. Mayo with Dr. William J. Mayo in extending hospitality, in the organization of many aspects of the clinic and in carrying a great share of the responsibility for his success and happiness has been widely recognized.

In 1884, Dr. William J. Mayo spent two months in New York City taking the first course given in the New York Post-Graduate School. In 1885 he took a course in the New York Polyclinic. For many years he and Dr. Charles alternated in spending week-ends in Chicago with Christian Fenger. Frequently they traveled abroad to observe surgery as practiced in every nation in the world.

In 1885, Dr. William J. Mayo read his first paper before the Southern Minnesota Medical Association, and his literary contributions to every phase of medical science and art and practice have been innumerable.

From 1889 until 1905, the Drs. Mayo carried on their work in St. Mary's Hospital in Rochester, an institution which they, with their father, had aided in establishing and one which is now known throughout the world largely because of their work. The records of surgical procedures performed indicate an early tendency toward selection of abdominal surgery by Dr. Will, leaving many of the other fields to Dr. Charles. As Dr. Will himself said, "Charlie soon had me driven to cover by being a better surgeon, and I began to specialize in abdominal work and in operations on the ureters and kidneys." As the repute of their work spread, they soon began to associate with themselves younger men who had shown special predilection for surgical work, the first to be selected being Dr. E. Starr Judd, who had charge of the third operating room in 1905. From that time on, the surgical developments in Rochester were so rapid that additional wings continued to be added to the hospital, an annex was opened and additional hospitals were built. As it became apparent that internal medicine and diagnosis, with the work of the laboratory, would be of prime importance, these developments were particularly encouraged. Throughout the record of the growth and development of this monumental institution to the proud position which it now occupies signs of the leadership of Dr. William J. Mayo appear again and again. Early in his career Dr. Will conceived the idea of a permanent endowed institution in Rochester to be connected with a university. He elaborated the concept of the Mayo Foundation and he gave freely of himself, of his funds and of his life for its perpetuation.

The honors and recognition given to him indicate how widely recognized were his achievements for the good of mankind. He was a fellow of the American Surgical Association, of the Royal College of Surgeons and of the College of Physicians of Philadelphia. He received the honorary LL.D. from the universities of Toronto, Maryland, Pennsylvania, McGill, Leeds, Pittsburgh, Carleton, Manchester, Temple and Aberdeen. He received the honorary degree of D.Sc. from Michigan, Columbia, Leeds, Harvard, Marquette and Northwestern universities. He received the honorary M.D. from Trinity College in Dublin and from the University of Havana. He was also a fellow of the Royal College of Surgeons, Ireland, of the Royal Accademia Medica di Roma, of the Royal Society of Medicine of England, of the Royal Australian College of Surgeons, of the Académie de médecine de France. Other recognitions include the gold medal of the National Institute of Social Sciences; the Distinguished Service Medal of the United States Army; the Henry Jacob Bigelow gold medal of the Boston Surgical Society; Royal Order of the Commander of the Northern Star, conferred by His Majesty the King of Sweden; the Finlay Congressional Distinguished Service Medal, conferred by Cuba; the cross of the Royal Order of Knight Commander of the Crown of Italy and the citation for distinguished service given by the American Legion with a commemorative plaque, which was presented by the President of the United States in person in 1934.

Dr. William J. Mayo became associated early with medical organizations. He served as president of his county and state medical associations. He was chairman of the Section on Surgery and Anatomy of the American Medical Association, 1898-1899, and President of the American Medical Association, 1906-1907. He was also President of the American Surgical Association, of the American College of Surgeons, of the Con-

condensed presentation. Geschickter's chapter on bone tumors is excellent, as is Cubbins' contribution to fractures of the pelvis. Blair and Brown's chapter on reconstructive surgery is instructive Claude C. Beck contributes an illuminating chapter on the surgery of the heart and pericardium Thrombosis of the mesenteric vessels is well described. Nothing is said about the treatment of early cases by relieving vascular spasm. This reviewer cannot unreservedly subscribe to the categorical bad prognosis enunciated in this connection. Balfour's contribution to surgery of the stomach is instructive and to the point.

Special commendation should be accorded the chapter on the anatomy, physiology and diseases of the lymphatic system by George Curtis Smith-Peterson's discussion of lower back pain is practical and complete. The chapters on the diseases of the breasts, gynecology and appendicitis are good. There is a new chapter on carcinoma of the lips and tongue. Other new sections are congenital obstruction of the bile ducts, duplication of the alimentary tract, tetanus lymphogranuloma inguinale and ano-rectal diseases Finally, observations are recorded on the surgical treatment of actinomycosis, surgical treatment of ulcerative colitis, the value of vitamin K in jaundiced patients, etc. The illustrations are, in the main, good. The bibliographic references are well selected. The index is thorough Students and general surgeons will gain much from a perusal of this fine work.

M T

Fractures and Dislocations in General Practice. By John Hosford, M.S. (Lond.), F.R.C.S., Assistant Surgeon to St Bartholomew's Hospital and Late Hunterian Professor, R.C.S. Price s12 6p. net Pp 274, with 74 illustrations. London, H. K Lewis & Co., Ltd., 1939.

THIS work is more of a compend than a complete work on the subject of fractures. It may be an excellent answer to the student who wishes only to glean enough of the fundamentals to pass an examination, but it could be more detailed in explaining methods which are commonly used today in treating the varieties of fractures and dislocations.

The lack of original illustrations is highly detrimental to the work and the reproductions of those used is not as good as might be expected.

The author's style of presentation makes reading of the book easy and pleasant.

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WAY SUNG NEW

Way Sung New, B.A. (St. John's), M.D. (Harvard), F.A.C.S., F.I.C.S. (Geneva), one of the most honored members of our Association, passed away on May 4, 1937, after a protracted illness, at the early age of 44.

Born in Shanghai on June 14, 1892, Dr. New lived his early years in that city and received his education at St. John's University, thereafter going to the United States for the medical course at Harvard, followed by a number of interne appointments in that country.

On his return to China, Dr. New held a surgical appointment in the Peking Union Medical College and subsequently settled in Shanghai where the remainder of his working life was spent. Always interested in orthopedic surgery, New's sensitive spirit was deeply grieved by the pitiable condition of the crippled and maimed who too often left the hospital uncured and totally unfitted for the struggle of life, and he decided to devote his own life to their special care and to specialize in orthopedic surgery of which he was already a brilliant exponent.

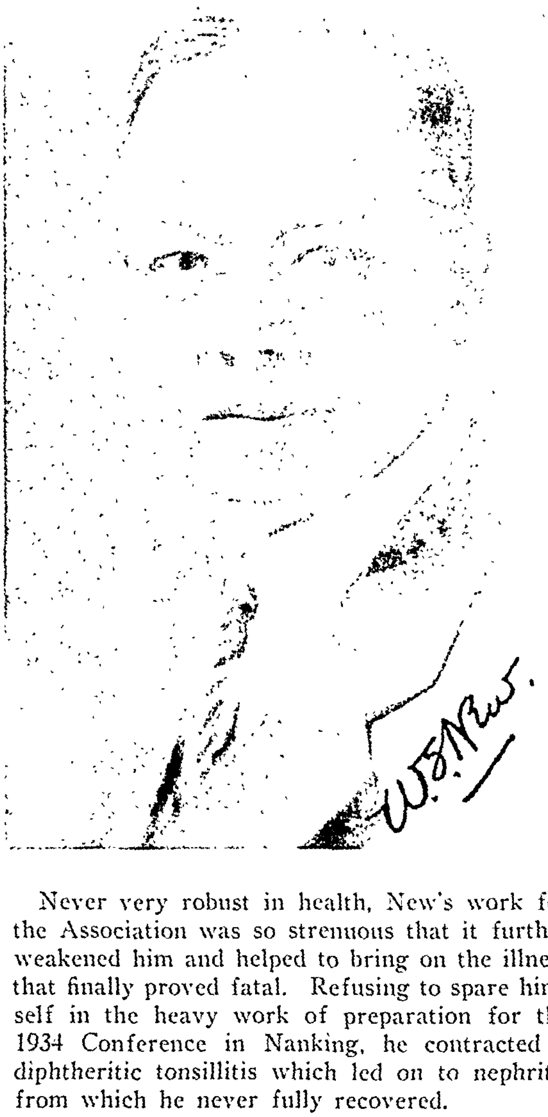
Following on this he founded the Orthopedic Hospital of Shanghai, becoming its first medical superintendent. To say he founded this hospital is but a poor way of expressing the fact that through his unbounded energy it came into being, that every detail in the hospital was of his own planning, and that in everything except the literal sense he built it with his own hands, ably supported by his talented wife. The hospital was a model hospital of which we Shanghailanders were very proud.

Dr. New soon became the pre-eminent figure in China in orthopedic surgery, the highest in the land turned to him for help along this line and many of the poorest live to bless his name for renewal of life and limb and for a help that made life again worth living.

We have already mentioned New's unbounded energy. This is the only way to describe his activities. No one line of work could suffice, not even his beloved orthopedic surgery. New was as fine an organizer as he was a surgeon and no cause that was great or good failed to make its appeal to him, and what he put his hand to prospered.

His interest in a well organized, high standard medical profession in China was very great and what our Association owed to Dr. New was more than words can say.

On his return from America he was one of the principal helpers in organizing the National Medical Association of China and was the Secretary of its first Conference. Later, and for some years, he was a member of the Executive Committee of the China Medical Association and it was very largely through him that efforts for the amalgamation of the two Associations were crowned with success; in acknowledgment of which he was elected the first President of the amalgamated body, henceforth to be known as The Chinese Medical Association.



Never very robust in health, New's work for the Association was so strenuous that it further weakened him and helped to bring on the illness that finally proved fatal. Refusing to spare himself in the heavy work of preparation for the 1934 Conference in Nanking, he contracted a diphtheritic tonsillitis which led on to nephritis from which he never fully recovered.

Even his illness, however, could not check his work for the Association and in 1935, though in a very precarious state of health, he took over the office of General Secretary till a suitable, younger man could be found and trained for the post; and it was through his energy that the financial campaign which resulted in the Association being able to purchase its own headquarters was brought to a successful issue.

New loved the Association and he loved to visit the Association building. He used to come regularly in the afternoon about four o'clock, even when there were no formal meetings to sit

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these?' I asked. 'Can't do a thing. Can't dump them out as they have no homes. Just have to wait till the good Lord calls them.' That was the reply.

"I found that there was not a single surgeon in the whole of China specializing in orthopedic surgery. And yet, once my eyes were opened, I found a crying need for orthopedics in every hospital. I did not have to travel to Nanking to find orthopedic cases. There were plenty of them right under my own nose in Shanghai. Can't do a thing. That reply still rang in my ears. Yes, something could be done. 'I'll put orthopedics on the map in China,' I said to myself.

"After looking round some more and after having considered the situation carefully, I announced to my parents that when I returned to the U.S.A. again, I would specialize in orthopedics. They had never heard of this term. Father consulted his medical friends, and they all in one unanimous voice voted that I must be somewhat crazy to pick out this specialty. 'He is 20 years ahead of his time and he would starve before he knew it,' was one remark. The only person who could see eye-to-eye with me was Dr. Henry S. Houghton. His advise was, 'Someone must start this specialty in China; why not you?' Once my mind was made up, I did not waver, and promptly set myself to make my plans."

Associated Nationally

Since 1922, Dr. New had held office as secretary and counsellor in many national medical bodies. He was visiting orthopedic surgeon at the Margaret Williamson of Shanghai; at Soochow Hospital, Soochow, and at Kwangchi Hospital in Hangchow; as well as lecturer in his subject at St. John's Medical School and elsewhere. He established the Orthopedic Hospital in Shanghai—the first of its kind in China—in 1928, in the administration of which he had the devoted assistance of his wife. Two or three years ago he entrusted himself in the orthopedic department of the Kwangchi Hospital, Hankchow, which owes its inception and inspiration so largely to him.

The offices he held were always secondary to the service he determined to render and the influence he exerted in human life. The most significant achievement of Dr. New's life was the amalgamation for which he was chiefly responsible between the National Medical Association of China and the China Medical Association, the latter body being the successor to the China Medical Missionary Association. Dr. New planned for this union for a number of years and rejoiced when it was finally accomplished in 1921.

He became the first president of the new national body, now known as The Chinese Medical Association. He devoted his energy to pushing forward the work of this national medical body, thinking of it by day and dreaming of it by night. Even during the last week of his life, while lying desperately ill, he woke up continually to mention the work of the Association. Dr. New was conspicuous as organizer and co-ordinator, a man of courage and firm in facing difficulties; but always full of grace in his approach to difficult human personalities and situations.

At the Canton Conference of the Chinese Medical Association in 1935, though far below par in physical health, Dr. New undertook the heavy duties of General Secretary and held this office without sparing himself until January, 1937. He spent himself during the last months of his life in training others to carry on the work of the Association.

During the last three months of his life, Dr. New gave more attention than ever to the work of the Council on Medical Missions. He made a remarkable address to the medical missionaries who were gathered in conference on March 31; and on the following day was unanimously elected to be the secretary of the Council on Medical Missions. It was his concern that the Christian medical forces should become closely related to the National Health Administration and all the health activities of China.

He was surgeon-general of the Northern Expeditionary Force, led by Gen. Chiang Kai-shek, in 1927. From that time onward, the Generalissimo became his constant friend and admirer. Since the Sian incident in December, 1936, Dr. New was the Generalissimo's chief professional consultant, so much so that, when the Generalissimo was under treatment in the Chunshan Memorial Hospital a few days ago, it was not uncommon for the attending surgeons to move over to the bedside of Dr. New at his own home to confer with him about the surgical care of the Generalissimo.

A Religious Personality

Dr. New's will reveals his simpleness of taste and his devoted religious personality. Concerned for the well-being of those in need rather than for his own health, he may be described as one who came "not to be ministered unto, but to minister."

At the end of his life, Dr. New was not only the leader of orthopedic surgery in China, but a member of the Commission on Medical Education, and actively related to the advancement of the highest standards in the medical profession of China.

He is survived by his widow and young son Peter, his mother, his brother Dr. Way Ling New, and his sister Mrs. Way Tsung Hsia. Our deepest sympathy goes out to his family, and above all to his widow, who has borne his sufferings with him with devotion and care.

The Journal of the International College of Surgeons

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DECEMBER, 1939

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bering every possible detail, and specially enquiring of the progress of the Building Fund Campaign. He spoke of his hopes for the progress of the Association, and of his desire to see the new building contain an attractive library where practitioners would like to come to spend some hours in profitable reading. To the last, he was thinking of the welfare of his colleagues in the profession and in the Chinese Medical Association. How can we ever fill the gap which his passing away has left?

S. S.

CHARLES W. STREAMER

Dr. Charles Walker Streamer, an outstanding surgeon of Southern Colorado, died July 5 of bronchopneumonia.

Dr. Streamer was born in Boulder, Colorado, July 14, 1892. He received both his bachelor of arts and doctor of medicine degrees from the University of Colorado. He joined the medical staff of the Colorado Fuel and Iron Corporation in 1917, and except for about two years of service in the World War, continued in this position until 1925. During the War he served overseas and was in command of the 349th Ambulance Corps of the 88th Division.

Dr. Streamer was a member of the Colorado State Medical Society, a Fellow of the American Medical Association, a Fellow of the American College of Surgeons, and a Fellow of the International College of Surgeons. He was division surgeon of the Missouri Pacific Railroad, a member of the staffs of Parkview and Saint Mary Hospitals, past president of the Pueblo County Medical Society, of the Pueblo Clinical and Pathological Society and of the Missouri Pacific Hospital Association.

He was a member of the First Presbyterian church of Pueblo and of the Masonic fraternity, and was active in civic and social organizations of his city and state.

Surviving are his wife, Mary Robertson; daughter, Mary Martha; and son, Charles Walker, Junior.

Dr. Charles Walker Streamer, respected by all who knew him, admired and beloved by his patients, honored and trusted by his confreres, was called to lay aside the gown and scalpel ere his professional sun had reached its meridian.

Known for his kindness to men of all sorts and conditions, friend of his fellows, servant of his Maker!

HERBERT A. BLACK, M.D.

Dr. Archibald Young, Regius Professor of surgery of the University of Glasgow, Scotland, died July 23, aged 65.

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upon anatomical divisions of the body, are a happy thought, making an easy guide to the use of the book.

The diagrams, illustrations and detailed descriptions of methods of application and construction of apparatus are most helpful and easy to follow.

The publisher should be favorably mentioned and thanked for the choice of type and the excellence of the reproductions.

The book should be invaluable to both the general practitioner who does some orthopedic work, as well as to the experienced orthopedic surgeon.

HORACE E. TURNER.

Fotografia del estomago. By José P. Uslenghi, M.D.; Herbert Hoffmann, M.D., and Joseph Heilpren. Pp. 204, with more than 300 illustrations. Buenos Aires: Aniceto Lopez, Publishers, 1939.

THIS book is a complete contribution on intragastric photography. The time required for this technic and the cost of the apparatus required, as well as the difficulties of interpreting the small and incomplete photographs, have excluded this method of examination to a large extent, and with the advent of the Wolf-Schindler gastroscope the photographic procedure has been used still less. However, it deserves a place in the literature of gastroenterology, and the authors of this work are to be commended on their painstaking study and comprehensive report. The abundance of illustrations testify as to the care and detail with which this subject is handled. Those who read Spanish will find this a very valuable addition to their library.

T.

A Textbook of Surgery. Edited by Frederick Christopher, B.S., M.D., F.A.C.S., Associate Professor of Surgery at Northwestern University Medical School, Chief Surgeon, Evanston (Illinois) Hospital. Second edition, revised. Price, $10 net. Pp. 1695, with 1381 illustrations on 752 figures. Philadelphia and London: W. B. Saunders Company, 1939.

THIS book represents an excellent collection of authoritative surgical monographs. The spontaneous success of the first edition presaged an early revision of the work. The second edition proves its merited reception by the profession. There are 185 contributors, 40 chapters and 1,650 pages in this one volume compilation. The chapter on "Inflammation and Bacteriology" opens the work and well written chapters on pre- and postoperative care close it. The endocrine system is alotted only 34 pages. Diseases of the thyroid gland receive thorough discussion. The principles and treatment of fractures is alotted 177 pages. The subject matter is well presented. The treatment of specific fractures suffers from too much abbreviation to be of distinct value. Atrophy of the testicle is pointed out as a possibility of varicocele operation. Nothing is said as to how to avoid it.

The sections of neurosurgery are excellent. Amputations are discussed in 16 pages, a rather

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GENERAL INFORMATION

THE Journal of the International College of Surgeons is published for the time being under the auspices of the United States Chapter of the International College of Surgeons, for the advancement of surgery and as a medium of publication for reports of research, clinical observations and experimental work in surgery, as well as to acquaint members of the International College of Surgeons throughout the world of its activities.

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One carbon copy should accompany the original paper. A summary must be given at the end of the article.

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Editorials

THE TREATMENT OF PEPTIC ULCER

The general attitude concerning the treatment of peptic ulcer has gradually changed in recent years. The pendulum has continued to swing toward the conservative side. The usual belief at this time seems to be that most duodenal ulcers, particularly in young people, can be handled very well by medical means. Probably the ideal professional setup in the hospital treatment is for the medical and surgical staffs to cooperate in the supervision of the patients with ulcer. At one time, the Sippy diet plus alkalies was thought to be law and gospel. Many at this time favor a much more liberal diet, and still others question the value of alkalies. That protein, particularly meat, constitutes a definite buffer against the effects of gastric acid on the stomach wall, there seems to be no doubt.

There has developed a well marked tendency to restrict gastro-enterostomy to those cases in which cicatricial constriction of the pyloric ring has taken place. In other types of cases, there is some question as to the absolute benefit to be derived from this operation.

Undoubtedly, environment that protects the patient from stress and strain, likewise drugs that lower the output of gastric secretion, are of value.

In regard to the treatment of bleeding ulcers, the liberal diet advocated by Meulengracht has been proved to be of definite value and is gradually gaining adherents. The use of the new vegetable extract containing oxalic acid, worked out by Steinberg and others in the Kensington Research Laboratories, will doubtlessly prove to be of value in the treatment of bleeding ulcers during the emergency period. The bleeding ulcer that develops before middle age is more responsive to diet and medication, whereas the ulcer that begins to bleed during the arteriosclerotic period of life constitutes a grave emergency that calls for early surgical intervention. The duodenal ulcer that defies medical treatment or causes intolerable pain calls for surgical intervention of the radical sort. Likewise, some cases in which for economic reasons it may be impossible to carry out a proper dietetic and medical regimen. The best operative results are those which have followed resection of about three fifths of the stomach.

The treatment of ulcer of the stomach will undoubtedly continue to be largely surgical. Some of the gastric ulcers, particularly if situated on the greater curvature, can be satisfactorily treated by excision, whereas, those on the lesser curvature will, for the most part, call for radical resection.

The general subject of treatment of peptic ulcer still leaves much to be desired, all methods being handicapped by many limitations and no one being entirely satisfactory.

JOHN E. CANNA
Charlest

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THE USE OF MAGNESIUM TRISILICATE, COLLOIDAL KAOLIN AND ALUMINUM HYDROXIDE IN ANTACID GASTRIC THERAPY

HISTORICAL NOTES ON ULCER OF THE STOMACH AND DUODENUM

HYMAN I. GOLDSTEIN, M.D.,
President of the Northern Medical Association of Philadelphia
CAMDEN, N. J.

FOR many centuries the problem of the treatment of ulcer of the stomach and duodenum has been of much concern to those interested. Inflammatory and ulcerative diseases of the stomach were discussed and treated by Paulus Aeginata (625-690 A.D.); Bartolomeo da Montagnana [(1395-1460) Consilia . . . , Venice, 1514]; Montanus (1498-1552); Laurentius Scholzius (Scholtz von Rosenau, 1552-1599): Joannes Heurnius (Jan van Heurne, 1543-1601); Christopher Guarinonius ("Consilia Medicinalia," Consultatio 459, pp. 520-521, 1610, Venice); Johannes Crato à Kraftheim (1516-1586); Thomas Bartholinus ("Historiarum Anatomicarum Rariorum," Cent. III, Historia XCII and L, 1657); Laurentius Phryesen (Fries, died circa 1532: "Spiegel der Artzney desgleichen," pp. CXXXIII-CXLIV, 1518, Strassburg); Joh. Varandaeus (died 1617; "Tractatus de Morbis ventriculi," 1620, Lugduni); Antonius Fumanellus (In "Opera multa et varia," "De Ventriculi affectibus praeter naturam," pp. 513-518, 1557, Zurich, ed. 1); Balduinus Ronsseus (died 1596; "Opuscula Medica," a poem on "Ventriculi Morbis," "Singultui," and "Coeliacis," in "Venatio Medica," Section III, pp. 75 and 77, Lugduni Batavorum, 1618); Oribasius Sardianus ("Medica Opera," "Synopseos ad Eustathium," Liber IX, Caput X, p. 138, and Caput XI, 1553, Venice); Rosenstein (Dissert. de inflammatione ventriculi, Upsal. 1741); P. Hecquet [(1661-1734) "de la digestion et des maladies de l'estomac," etc.]; Arthur Daniel Stone (London, 1806); G. Dieulafoy (1897, 1898, 1912), and others.

SYNOPSIS OF LITERATURE

Many of the early reports of importance have been entirely overlooked by investigators, gastroenterologists and surgeons in recent years, particularly the many interesting inaugural dissertations and the reports published in the Journal de Médecine, Chirurgie, Pharmacie, etc., Paris. In Tome III, pp. 407-434, Pluviôse an X, 1802, Citizens Corvisart and J. J. Leroux published in this journal an article ent "C

PATRICIVS VERONENS. + MARCVS ANTONIVS IOAN BAPT MONTANVS
Non minus hoc nato gaudet Verona parente
Eximium patriae praebet utrumque decus.

Joan Bapt Montanus (1498-1552)

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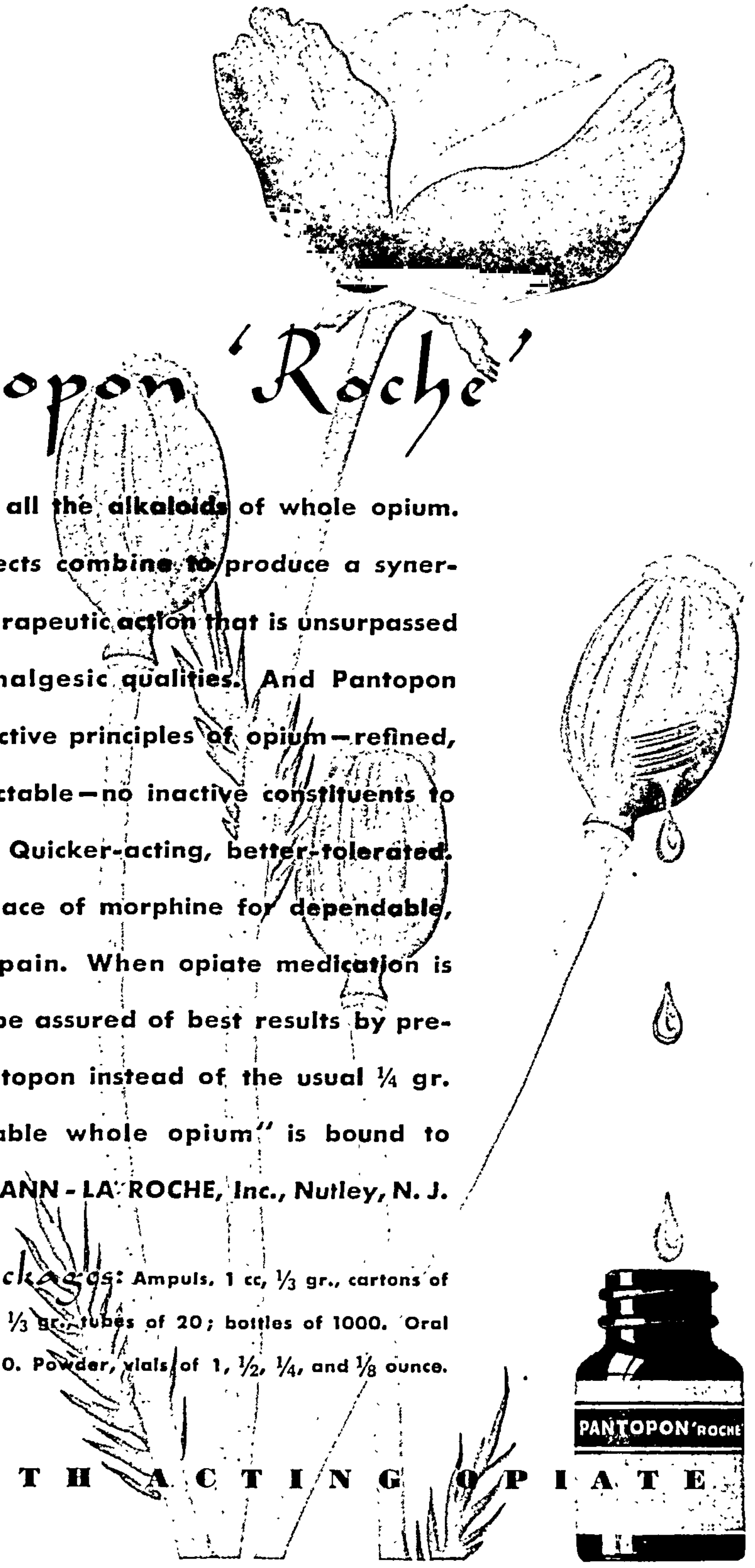

A SMOOTH ACTING OPIATE

triculum et caput, praecique in statu praeternaturali," Lugdundi Batavorum, 1784); C. Wightman ("De consensu ventriculum inter et cerebrum," Edinburgi, 1808); and G. Box ("De ventriculi usu et actione in ingesta," Lugdundi Batavorum, 1744).

DN.
GVILHELMI FABRICII
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Curationum
Medico-Chirurgicarum
Quae extant omnia.
FRANCOFVRTI
Sumptibus
JOANNIS BEYERI
M.DC.XLVI.

Wm. Fabricius Hildanus, *Observationum et Curationum Chirurgicarum,* 1646 Centuria III; Observatio XX.

Alvarez has recently called attention to "An Experimental Study of the Action of Oil on Gastric Acidity and Motility," by D. M. Cowie and J. F. Munson [Arch. Int. Med. I: No. 1, pp. 61-101 (Jan.) 1908], [illegible] should be reread by many of us [illegible]

MEMBERS

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A splendid representation of Technical Exhibitors arranged for the forthcoming Annual Meeting, again manifests a serious regard for the growing importance of the International College of Surgeons and its high ranking membership. Their support, which materially assists in defraying the cost of our Annual Meeting, certainly merits concrete evidence of your appreciation and personal interest in their exhibits. This time, make it even more a point to see the exhibits and to register at the booths. It will mutually benefit yourself and the College. And if your helpful cooperation may be stretched another point, the Committee would appreciate your referring the name of any ethical concern you deem worthy of representation in our Technical Exhibits to Joseph B. Tufts, Director of Exhibits, 41 East 42nd Street, New York, N. Y.

THE ARRANGEMENT COMMITTEE

neither laxative nor constipating. It does not alter the acid-base balance of the blood serum. Hydrated trisilicate of magnesium is chemically identical with *Meerschaum* or *écume de mer* or *Glocker's sepiolite* with the formula $H_4Mg_2Si_3O_{10}$ or $Mg_2Si_3O_8 \cdot 2H_2O$. It has been used as a substitute for soap and Fuller's earth. "Magnesite" and "aphrodite" (Sweden) are similar to the trisilicate of magnesium. The silica (S_1O_2) formed acts as a further adsorbent of acid as it is an active hydrated colloid. In the presence of acid, magnesium trisilicate becomes a colloidal gel which hinders absorption. *Calcium carbonate*, which is popular in ulcer therapy, is constipating when large quantities are required for neutralization and releases carbon dioxide (CO_2). *Sodium bicarbonate*, as is now well recognized, is definitely irritating in high concentration and causes the secondary rise of acid. It is systemic in effect and *not infrequently causes subclinical alkalosis.* It releases carbon dioxide, thus producing increased intragastric tension. Because of these facts, the essayist was led to try the combination of trisilicate of magnesium (50 per cent), colloidal kaolin (25 per cent), and aluminum hydroxide (25 per cent) in antacid therapy for the treatment of ulcer of the stomach and duodenum.

FORMS OF THERAPY

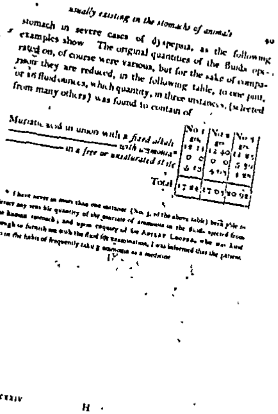
Since the experimental studies by the Abbé Lazzaro Spallanzani (1729-1799), of Pavia, Sir Benjamin Collins Brodie (1783-1862), R. D. Thomson (1840), Schiff (1845, 1846, 1854, 1867), William Beaumont (1785-1853), Réaumur (who, in 1752, isolated the gastric juice and demonstrated its solvent effect upon foods), Ebstein, Lebert, Jaworski, Adolf Kussmaul (1822-1892), Ivan P. Pavloff (1849-1936), and many others too numerous to mention, all forms of *therapy* have been recommended for the treatment of gastric and duodenal ulcers. Bassler (New York, Rev. Gastroenterol., July-Aug., 1939), in his most recent article on the treatment of peptic ulcer, states (Read Dec. 29, 1938) that Baillie gave an accurate description of gastric ulcer, accompanied by case histories, in 1793, and that Riegel, in 1886, introduced the use of *alkalies*, mainly for hyperchlorhydria. May I, in this review, make note of the early report by J. G. Sommer (1696) on "De Ardore Ventriculi" and the use of soda for hyperacidity; the discussion by A. Q. Rivinus (1652-1723), "De *acido* ventriculi fermento" (1677); the use of "alkaline and absorbent medicines" and a "dieta antacida" by A. G. Richter (1742-1812) in 1794; the employment of *sodium bicarbonate* in "painful stomach" by Trousseau and Bonnet (1832); and the use of bicarbonate soda by Reichmann in his studies on patients (Warsaw, 1895). Adolf von Strümpell, during 1895-1911, used *bismuth* and *bicarbonate of soda* in the treatment of peptic ulcer, long before Sippy popularized his antacid and astringent therapy.

Spallanzani (1782) believed that digestion begins and ends in the stomach. Giovanni A. Borelli (1608-1679) treated digestion as a purely mechanical process —a grinding and crushing action of the stomach. Jean Baptiste van Helmont (1577-1644), a Belgian mystic, had considerable knowledge of the gastric juice and the acids of the stomach. Charles Richet (1850-), produced (1878) a copious flow of gastric juice in a patient who had to be fed through a gastric fistula on account of a strictured esophagus, and made other interesting investigations on the gastric juice.

Since these early days, we have had presented to us many forms of *dietary regimes* for *gastric ulcer*, such as those of Jacob Bissegger (1856, Zurich), William Leube (1897), Lenhartz (1904), Lambert (1908), Sippy (1915), and E Meulengracht (Copenhagen).

Thus it is seen that alkalis have been used for centuries, but it was not until

Ziemssen's Handbuch d. spec. Pathol. Vol. VII) introduced *soda solutions* into the stomachs of dogs with gastric fistula. Reference should be made to the experiments by Du Mesnil (Deutsch. med, Wochenschr., 1892), and Linossier and Lemoine (Acad. de Méd. de Paris, Session March 28, 1893).



usually existing in the stomachs of animals

stomach in severe cases of dyspepsia, as the following examples show. The original quantities of the fluids operated on, of course were various, but for the sake of comparison they are reduced, in the following table, to one pint, or 16 fluid ounces, which quantity, in three instances, (selected from many others) was found to contain of

MDCCCXXIV H

Prout's report of discovery of free HCl in gastric juice, last page.

COMPLICATIONS FOLLOWING USE OF ALKALIS

All of us, at some time during the past quarter of a century, since the appearance of the Sippy form of treatment (1912-1915), have met some patients with ulcer suffering from subclinical alkalosis and perhaps some with alkalemia and toxic manifestations. These phenomena are discussed by Wilfrid Oakley (July 27, 1935) who concludes, "The treatment of peptic ulcer by *alkalis* and diet is occasionally complicated by the occurrence of certain symptoms associated with urinary changes and a rise in the alkali reserve and blood urea. The amount of alkali required to produce alkalosis is usually large . . . but symptoms may result from smaller doses, especially if there is severe or continued vomiting. In the late stages of alkalosis patients may die in spite of treatment." Hardt and Rivers, of Rochester, Minnesota (1923), state, "It has been our experience in this particular group (ulcer cases difficult or almost impossible to control the acidity) with one exception, that when an attempt is made to control the acidity, symptoms of toxemia usually appear." Hardt states that patients whose gastric acidity persistently remains uncontrolled may show symptoms early—such as headache and nausea, tightness in the back of the head, irritability, dizziness, vertigo, vomiting, aching in the joints and muscles—and may develop a dislike for milk, complaining that milk is distasteful or "sour." These authors conclude that patients with duodenal ulcer treated *by the Sippy method* may develop definite symptoms of toxemia associated with renal changes, increased blood urea, and normal or increased carbon dioxide combining power of the plasma. Patients with duodenal ulcer and renal complications are inclined to develop toxic manifestations to a much *greater* degree.

Sodium Bicarbonate. Sodium bicarbonate freely used in large doses for long periods of time impedes the normal liberation of oxygen by the circulating blood due to its pleionectic* action on hemoglobin. The pleionectic tendency of sodium bicarbonate leads to anoxemia, as demonstrated by Barcroft (1914), confirmed by MacLeod (1921), and emphasized by Latchford (1938).

The ill effects of the use of bicarbonate of soda in some of these cases have been previously noted by Grant (1922), Hardt and Rivers (1923), Hurst, Houghton, Venables and Lloyd (1925),

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**Pleionexy* (Latchford) is that condition of the circulating hemoglobin in which it holds on more firmly to its gathered oxygen than in the normal condition (mesonexy), and so gives off less oxygen to the tissues than normally. With the onset of pleionexy, anoxemia develops, which may kill the organism.

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BUSINESS SECRETARY OF U. S. CHAPTER APPOINTED

At a meeting of the Executive Council of the United States Chapter of the International College of Surgeons held September 30 in Daven-sponding Secretary to the Board of Examiners.

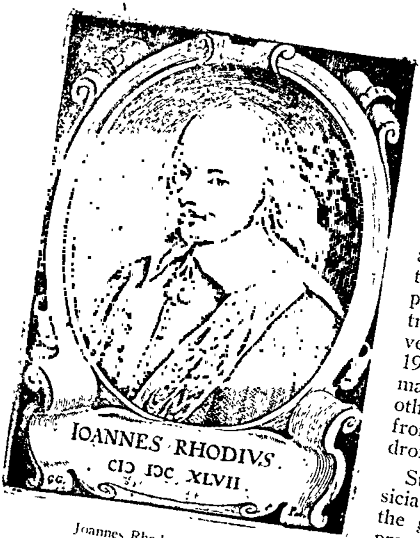
Chapter was created and Mr. Ralph E. Osborne of Toledo, Ohio, was appointed to fill that position.

Mr. Osborne, who was chosen upon the recommendation of Dr. Frederick M. Douglass, President, served the Chapter in a special auditing and research assignment in August and September, 1939, when the Chapter had to effect numerous changes in the methods of administering its business affairs following the retirement of Dr. Edward Frankel, Jr., as Executive Secretary. For many months previous to that it had been apparent to the Council that the affairs of the Chapter had grown to such an extent that they could no longer be handled efficiently by the academic officers.

Mr. Osborne is serving the Chapter on a full-time salaried basis. As a business executive with wide experience in office practice, accounting, and budget control, he has been able to create and maintain the detailed book and file records that a growing institution requires to keep abreast of its membership affairs and academic operations. Under the terms of his contract, he is at the disposal of the entire membership for information. He may be addressed at 1020 Prospect Avenue, Toledo, Ohio.

In addition to his duties as Business Secretary to the Chapter, Mr. Osborne will act as Corresponding Secretary to the Board of Examiners.

The use of *magnesium trisilicate, colloidal kaolin*, and *aluminum hydroxide*, in combination, has given good results. In cases with considerable pyloric spasm and obstructive symptoms it is helpful to use antispasmodic remedies in rather liberal doses. Included among these are belladonna, atropin, novatropin, papaverin, perparin, nitroglycerin, with or without the use of phenobarbital or some similar remedy. In the more severe cases, the free use of such antispasmodics will prevent, in good measure, any possible tendency to marked retention



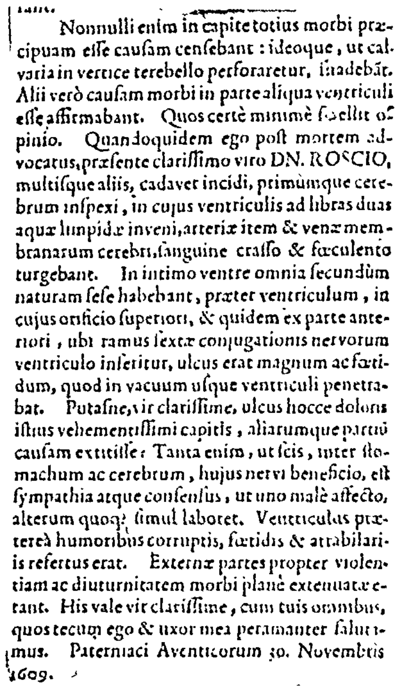
Joannes Rhodius (1587-1659)

Several hundred cases have been treated satisfactorily with this form of antacid therapy in private practice and in some large hospital clinics. The formula (trisilicate of magnesium, 50 per cent; colloidal kaolin, 25 per cent; and aluminum hydroxide, 25 per cent) was used in powder, capsules and tablets. Each patient received a liberal bland diet, with intermediate feedings of milk, or powdered whole milk and water, every two hours from 8 a. m. to 10 p. m., and eight drams of the formula (daily). One or two drams of this preparation were given before each of the main meals and one dram, before the milk feedings in the mid-morning, mid-afternoon and at bedtime. Frequently, these patients received an extra dose during the night, if they awakened. Those suffering with marked pylorospasm and severe pain were given novatropin, perparin and phenobarbital for prompt relief. Many of the patients were relieved, however, following the administration of the antacid formula in from three to five days.

Particularly useful is this form of antacid therapy in postoperative cases to prevent further hyperacidity and the possible occurrence of postoperative gastrojejunal ulcer. Fauley, Ivy, et al. prevent postoperative jejunal ulcer (Feb. 1939), and Woldman and Polan, Woldman and Rowland, B. B. Whitcomb and others have reported favorable results from the use of colloidal aluminum hydroxide in peptic ulcer therapy.

Surgeons must always be good physicians. It is highly advisable, even after the gastroenterologist, or the general practitioner of medicine, or the internist, has referred his ulcer patient to the surgeon, that during the period of further observation and before approaching the treatment of the ulcer surgically, a short *course of antacid therapy should again be tried by the surgeon* (except, of course, in emergency cases with acute surgical complications). If this medical treatment (by the surgeon) fails, surgery should be resorted t
ther delay. The s
est of the patient,
to prevent the devel
tive hypersecretion

vation sur une ouverture fistuleuse a L'Estomac." This was an epoch making report of a rather careful study with experiments on digestion in the case of a single woman, Magdalene Goré, 47 years of age, who for many years had a *gastric fistula.* This report and the reports by A. Wencker (1735) and Jakob Helm (Vienna, 1803) have been entirely overlooked. William Beaumont (1785-1853) studied the case of Alexis San Martin (Medical Recorder, Philadelphia 8:14, 1825, and 9:94-97, 1826) nearly a quarter of a century later and, no doubt, inadvertently missed the report by Corvisart and Leroux (1802). Our noted medical historian, the late Col. Fielding H. Garrison (History of Medicine, 1929, 476) erroneously states, "Beaumont was the first to study digestion and the movements of the stomach *in situ* (1825)."

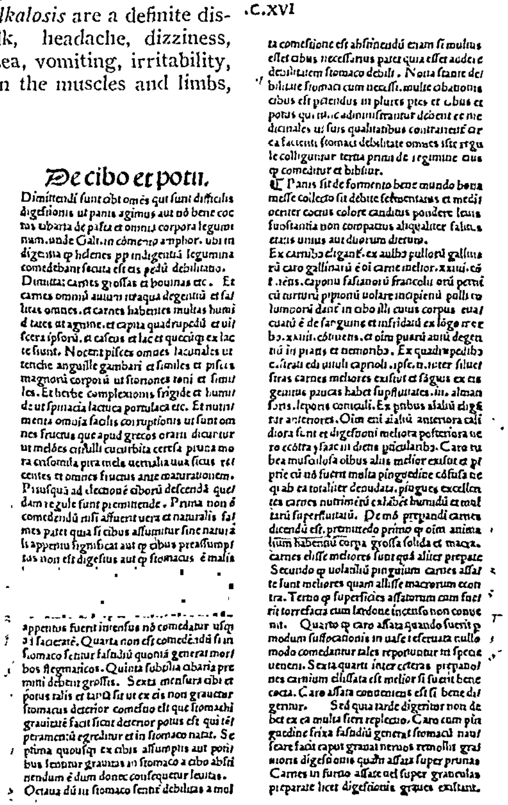


Nonnulli enim in capite totius morbi præcipuam eſſe cauſam cenſebant: ideoque, ut calvaria in vertice terebello perforaretur, ſuadebāt. Alii verò cauſam morbi in parte aliqua ventriculi eſſe affirmabant. Quos certè minimè fefellit opinio. Quandoquidem ego poſt mortem advocatus, præſente clariſſimo viro DN. ROSCIO, multiſque aliis, cadaver incidi, primùmque cerebrum inſpexi, in cujus ventriculis ad libras duas aquæ limpidæ inveni, arteriæ item & venæ membranarum cerebri, ſanguine craſſo & fæculento turgebant. In intimo ventre omnia ſecundùm naturam ſeſe habebant, præter ventriculum, in cujus orificio ſuperiori, & quidem ex parte anteriori, ubi ramus ſextæ conjugationis nervorum ventriculo inſeritur, ulcus erat magnum ac fœtidum, quod in vacuum uſque ventriculi penetrabat. Putaſne, vir clariſſime, ulcus hocce doloris iſtius vehementiſſimi capitis, aliarumque partiū cauſam extitiſſe? Tanta enim, ut ſcis, inter ſtomachum ac cerebrum, hujus nervi beneficio, eſt ſympathia atque conſenſus, ut uno malè affecto, alterum quoq; ſimul laboret. Ventriculus præterea humoribus corruptis, fœtidis & atrabilariis refertus erat. Externæ partes propter violentiam ac diuturnitatem morbi planè extenuatæ extant. His vale vir clariſſime, cum tuis omnibus, quos tecum ego & uxor mea peramanter ſalutamus. Paterniaci Aventicorum 30. Novembris 1609.

Left, William Fabricius Hildanus (1560-1634). Right, His *Opera Observationum et Curationum,* Francofurti, 1646.

The dissertations of interest are those by L. Brugnatelli ("Saggio d'un analisi chimica de'sughi gastrici," Pavia, 1784); De Galatheau ("La digestion de l'estomach touchant l'humeur *acide,*" Paris, 1675); J. Lossius and J. C. Vettelbach ("De fermento ventriculi," Jenae, 1665); J. Black ("De humore *acido* a cibis orto, et magnesia alba," Edinburgi, 1754); Bernardus Swalve ("Alcali et Acidium Sive Naturae et Artis instrumenta pugilica," Amstelodami, apud Johannem Janssonium à Waesberge, 1670); J. A. Schlemmer ("De ventriculo, exponens ejus anatomiam, physiologiam, et aetiologiam pathologicam," Pragae, 1754); P. Jas ("De mirabili, quae pectus inter et ventriculum intercedit, sympathia," Lugdundi Batavorum, 1784); J. Senebier ("Observations importantes sur l'usage du suc gastrique dans la chirurgie. Avec quelques additions de l'abbé Spallanzani à ses expériences sur la digestion," Genève, 1785); D. Veegens ("De sympathia inter ven-

To summarize, physicians and surgeons, treating ulcer patients, have at various times seen patients who, *under prolonged (systemic) alkaline therapy,* show apathy, twitchings, convulsions and coma, even death occurring in rare instances. The more common clinical symptoms of *alkalosis* are a definite dislike for milk, headache, dizziness, anorexia, nausea, vomiting, irritability, aching pains in the muscles and limbs, slow respiration, flushed face, profuse perspiration, weakness and prostration, drowsiness, dryness of the tongue and mouth, diuresis (in the early stage of alkalosis), deep coma (in the late stage), and tetany (rarely). Such *symptoms of alkalosis do not occur* from the use of the above describ antacid and adsorbent t


.C.XVI

De cibo et potu.

Baverius (1406?-1480), "De Cibo et potu."

sur les gastralgies et les entéralgies ou maladies nerveuses de l'estomac et des intestins," by J. P. T. Barras (ed. 2, Paris, 1827), and the comprehensive monograph (with very complete bibliography) by Viktor Lieblein and Heinrich Hilgenreiner, "Die Geschwüre und Die Erworbenen Fisteln Des Magen-Darmkanals" (Deutsche Chirurgie, Lieferung 46 C., von Ferdinand Enke, 1905).

The development of *ulcer after burns and after various abdominal operations* should be of some concern to the surgeon. Cumin [Edinburgh M. & S. J. 19: Sect. II, 337-344 (July) 1823] found inflammation of the intestines and peritoneum in cases of severe burn. Joseph Swan [Edinburgh M. & S. J. 19: Part III, 344-345 (July) 1823] reported the case of Joseph Baily, 5 years of age. At necropsy, every part appeared sound except the stomach, in the villous coat of which were several spots and stripes like sloughs, extending deep, and quite black. The lungs were sound. "The membranes of the brain were much more vascular than natural . . . There can be no doubt that the diseased appearances of the head and stomach were produced by the irritation of the skin" ("Practical Observations: Case of A Severe Burn"). This report by Swan antedates Curling's report (1842) by nineteen years. Recently, Harkins published a paper on this subject (Surgery 3: 608-641, 1938), and Penner and Bernheim (1939) also discussed this subject and reviewed the literature [Arch. Path. 28: No. 2, 129-140 (Aug.) 1939].

J. E. Summers, Jr., considered "The Cause and Possible Prevention of Gastric and Intestinal Hemorrhages following Operations for Appendicitis, Hernia, etc. [Medical Herald, St. Joseph, Missouri, 25: 469-475 (Nov.) 1906]. J. B. Roberts discussed "Gastric and Duodenal Ulcers Secondary to Wounds of the Urinary Bladder" [Trans. Amer. Surg. Assoc., Philadelphia, 26: 202-225, 1908; Ann. Surg. 47: 924-925, 1908] and mentioned the earlier reports by Billroth (1867) and Eiselsberg. Robert Jardine [Glasgow M. J. 62: 126-129, 1904; Trans. Glasgow Obst. Gynaec. Soc. (1902-1904), 4: 227-230, 1905; reported March 23, 1904] and Louis Sauvé [Revue de Chirurgie 31: pp. 211-225 (Feb.), pp. 363-382 (Mar.), pp. 492-508 (Apr.) 1905, Paris, Felix Alcan] made similar reports. J. K. Kelly (1904) mentioned two cases of ulceration of the stomach complicating ovarian cystomata. Elizabeth Pace (1904) had a patient who died on the twelfth day with gastric hemorrhages after appendectomy. At postmortem examination, an old gastric ulcer was found.

Among the articles that have appeared recently (1938-1939) concerning *the treatment of ulcer of the stomach and duodenum*, and which are of particular interest to those working in this field of medicine, may be mentioned the publications by Mutch and Mann (London), E. B. Lewis, Falconer and Lyall, Collip, R. E. Kelly, Anthony Bassler (New York), Brown and Dolkart, Tidmarsh, S. C. Robinson, Daly, Morlock, St. John and Flood, C. M. Jones, Woldman and Polan, Kyger, Jr. et al, Graham (Toronto), Kellogg (Seattle), La Due, M. B. Levin et al, C. W. Eisele, Aaron (Buffalo), and Franklin Hollander (Amer. J. Digest. Dis. 6: No. 2, p. 127, April, 1939), and W. P. Havens [J.A.M.A. 113: 1564 (Oct. 21) 1939].

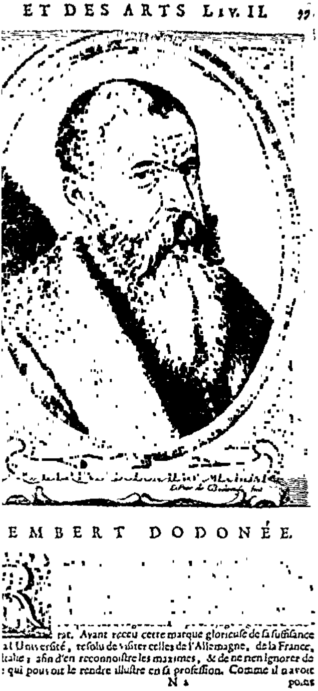
I. NONSYSTEMIC ANTACID THERAPY

For the past several years the writer has been interested in the use of *nonsystemic antacid therapy* in the treatment of gastric and duodenal ulcer. The combined use of magnesium trisilicate, colloidal kaolin, and aluminum hydroxide in sufficient amounts nearly to neutralize all "free acid," over a considerable period of time, has favorably controlled these cases.

Trisilicate of magnesium appears to be nonirritating to the stomach and is omnis acria atque acida removen- no utendum, sed neque praefrigido : nimis calido." Thus, it is noted \ulus C. Celsus (circa 35 B. C. — . D.?) prescribed a *special ulcer* 1900 years ago), which should be nous *Acid and acrid substances* *be avoided.* Wine may be taken, not too hot or too cold!

oratius Augenius (1527-1603) does discuss ulcer or perforation of the nach, but does consider gastric stion and its disturbances [Epistolarum Et Consultationum Medicinalium, Editio Tertio, Venice, 1592, Liber V, Epistola V, pp. 57-58, on 58 F.].

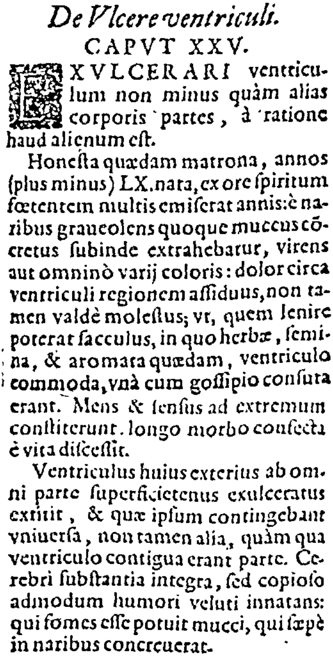
Among the earliest reports on gastric and duodenal ulcer, perforation and fistula, etc., were those made by L. Phryesen (Fries, 1518), Rembert Dodonaeus (1581), Marcellus Donatus (1586), Johannes Schenck (1530-1598), Mathias C. Cornax (born circa 1520), Alcmarianus Petrus Forestus (1522-1597), Felix Plater (1534-1614), Petri Borell in 1670 (1620-1689),



ET DES ARTS Liv. II 99.

EMBERT DODONÉE.

rat. Ayant receu cette marque glorieuſe de ſa ſuffiſance
al Univerſité, reſolu de viſiter celles de l'Allemagne, de la France,
Italie, afin d'en reconnoiſtre les maximes, & de ne rien ignorer de
: qui pouvoit le rendre illuſtre en ſa profeſſion. Comme il n'avoit
N 2 point



De Vlcere ventriculi.

CAPVT XXV.

EXVLCERARI ventriculum non minus quàm alias corporis partes, à ratione haud alienum eſt.

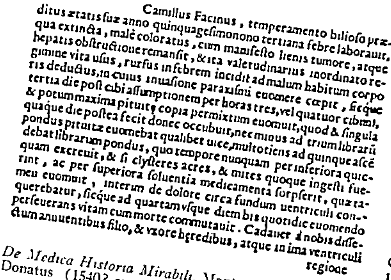
Honeſta quædam matrona, annos (plus minus) LX.nata, ex ore ſpiritum fœtentem multis emiſerat annis: è naribus graueolens quoque muccus cõcretus ſubinde extrahebatur, virens aut omninò varij coloris: dolor circa ventriculi regionem aſſiduus, non tamen valdè moleſtus; vt, quem lenire poterat ſacculus, in quo herbæ, ſemina, & aromata quædam, ventriculo commoda, vnà cum goſſipio conſuta erant. Mens & ſenſus ad extremum conſtiterunt. longo morbo confecta è vita diſceſſit.

Ventriculus huius exterius ab omni parte ſuperficietenus exulceratus extitit, & quæ ipſum contingebant vniuerſa, non tamen alia, quàm qua ventriculo contigua erant parte. Cerebri ſubſtantia integra, ſed copioſo admodum humori veluti innatans: qui fomes eſſe potuit mucci, qui ſæpè in naribus concreuerat.

ve, Dodonaeus (1517-1580). Right, his "De Ulcere Ventriculi" in *Medicinalium*, 1581

vationum, Caput XXV, pp. 61-62, Anno 1581, Apud Viduam, Thomae Henrici.]

One may also read Constantinus Africanus — Incipit liber Constantini *de stomacho,* in: Isaac Judæus, "Opera Omnia," CLXXVIII-CLXXXVI, 1515, Lugduni; the review of August Wencker's report (Strasbourg, 1735) concerning "une Fille qui a depuis vingt trois ans, l'estomac percé", which appears in the Journal Des Scavans, Tome CXII: 534-543, August 1737, Amsterdam, Jansons a Waesberge (Dissertatio Medica sistens Observationem rariorem de Virgine ventriculum, per viginti tres annos perforatum habente. Autore Augusto Wencker Argentino. Argentorati, Typis Melchioris Pauschingeri, Typographi).



Camillus Facinus, temperamento bilioſo præditus ætatis ſuæ anno quinquageſimonono tertiana febre laborauit, qua extincta, malè coloratus, cum manifeſto lienis tumore, atque hepatis obſtructione remanſit, & ita valetudinarius inordinato regimine vita uſus, rurſus in febrem incidit ad malum habitum corporis deductus, in cuius inuaſione paraxiſmi euomere cœpit, ſicque tertia die poſt cibi aſſumptionem per horas tres, vel quatuor cibum, & potum maxima pituitę copia permixtum euomuit, quod & ſingula quaque die poſtea fecit donec occubuit, nec minus ad trium librarũ pondus pituitæ euomebat qualibet uice, multotiens ad quinque aſcẽdebat librarum pondus, quo tempore nunquam per inferiora quicquam excreuit, & ſi clyſteres acres, & mites quoque ingeſti fuerint, ac per ſuperiora ſoluentia medicamenta ſorpſerit, quæ tamen euomuit, interim de dolore circa fundum uentriculi conquerebatur, ſicque ad quartam vſque diem bis quotidie euomendo perſeuerans vitam cum morte commutauit. Cadauer à nobis diſſectum annuentibus filio, & vxore hæredibus, atque in ima ventriculi regione

De Medica Historia Mirabili, Mantua, 1581, Marcellus Donatus (1540?-circa 1600) The case of Camillus Facinus

The case of Donatus, of Mantua (1586) appears in his "De Medica Historia Mirabili":

> "*Camillus Facinus,* a man of a bilious disposition, suffered at the age of 59 years from a certain fever. When that was cured, he was left with a bad colour, and was found to have a swelling of the spleen and an obstruction of the liver. While in this feeble condition, through careless regulation of his habits, he developed the fever once more and was reduced to a bad state of health. On the outbreak of this malady he began vomiting, so that on the third day, after taking food, for three or four hours he vomited what he had eaten and drunk, together with a great quantity of liquid matter, which was repeated on each subsequent day until his death. On every occasion he vomited no less than three pounds of phlegm, and frequently the amount reached as much as five pounds. During this time he never excreted anything by the lower channels, although purgatives, both violent and mild, were injected, and he took laxative medicines through the upper channels; these, however, he vomited. Meanwhile, he complained of pain about the base of the stomach, and thus he continued, vomiting twice daily, till the fourth day, when he passed from life to death. The body was dissected by us with the consent of his wife and sons, who were his heirs, and in the lower part of the stomach at the pylorus or lower orifice we found that the inner coating was ulcerated, and we had no doubt that this had been the cause of the malady."

Paul Freher (1591-1681), in his "Theatrum virorum eruditione clarorum, 1688, Noribergæ, Johannis Hofmanni, describes the lives and the causes of death (in many instances) of the cardinals and bishops, including the famous Cardinal Baronius who died of uncontrollable nausea which arose from three ulcers in the mouth of the stomach (Partis I, Sectio II, pp. 64-65, 1688).

Caesar Baronius (Sorano) Cardinalis died from gastric ulcer ("obiit ex ulcere stomachi") in June, 1607, at the age of 68 years: "Cum in senectute lethalem contraxisset nauseam, adeo, ut insensibili alimenti portione sustentari videretur, septuagesimum tamen superfuit Annum, quo XII mum Sacrae Historiae Librum ex voto complevit. . . . In cadavere dissecto Medici tria ulcera in ore ventriculi invenerunt, unde rebellis ejus nauseae sedatus fuit stupor."

Riverius reported gastric ulcers and mentioned a case in a goldsmith of Montpellier.

SEVENTEENTH CENTURY

Friedrich Hoffmann, of Halle (1
1742) demonstrat
"*atra bilis*" in the st
the vomitus consis
from the vessels of t
vessels, in his opini
by the action of the a

Gatewood (1927), Carr (1932), Steele (1937), Wang (1938), Latchford (1938), Falconer and Lyall (1938), C. Wesley Eisele (June, 1939), and others. Eisele states [Arch. Int. Med. 63: No. 6, 1048-1067 (June) 1939], "In all patients receiving alkali therapy some degree of chemical alkalosis develops, but clinical alkalosis develops in few."

Howland and Marriott (1918), and Harrop (1919) reported toxic manifestations and the occurrence of tetany from the use of sodium bicarbonate. Studies by Kellogg and Mettier (Aug., 1936), of San Francisco, indicate that in some types of anemia due to chronic blood loss from peptic ulcer, the *alkalinization* process associated with a Sippy regimen *inhibits the absorption of iron* contained in food. Pohle and Heath (April, 1939), of Boston, have made an interesting study of the influence of acid and alkaline salts upon the blood in hypochromic anemia treated by iron parenterally.

Other remedies have been suggested by Greenwald (1923), Kantor (1923), Mutch (1936, 1937), Mann (1937), Tidmarsh and Baxter (1938), Kraemer (1938), Winkelstein, Woldman and Rowland, W. A. Swalm, Eusterman, Whitcomb (1939), and others.

ALUMINUM HYDROXIDE

Woldman and Rowland (1936) state that *aluminum hydroxide* seems to have a deterrent effect on the secretion of acid, in addition to the neutralizing value it possesses. Aluminum hydroxide is an amphoteric substance, adsorbing acid in the gastric acid medium and giving it up in favor of alkalies when it passes into the duodenum.

Hollander (1939) well states, "For the purpose of retarding or eliminating ulcer formation, pepsin digestion as well as the erosive influence of free hydrochloric acid must be eliminated, and both of these can be excluded simultaneously by elevating the *p*H to 5.0. Complete neutralization of all organic acids (i.e., to a *p*H of 7.0) is not necessary, nor does it offer any obvious additional benefits." This can be accomplished by the combined antacid formula suggested by the writer.

IOANES SCHENCKIVS A GRAFENBERG MEDICVS SENIOR
AETATIS LXV

Joannes Schenck a Grafenberg (1530-1598).

DE VLCERIBVS
VENTRICVLI.

OBSER.

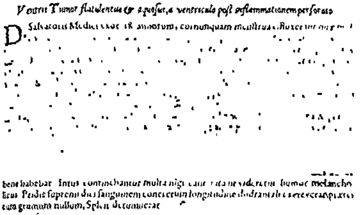
J. Schenck, 1595, Ed., Friburg.

dentally produced by the surgeon with the point of his scissors. Close examination of the rest of the stomach showed no excoriation, corrosion, hardness, discoloration or lesion."

Archibald Malloch also knew of this graphic description of the symptoms produced by the perforation of a gastric ulcer as described by Madame de la Fayette, lady-in-waiting to Henrietta Anne, Duchess of Orleans and daughter of Charles I, who was with her royal mistress on June 29, 1670, at Saint-Cloud during the last hours of her life. The Duchess had suffered for some time from pain in the stomach and side, but otherwise she seemed to be in good health. One day after dinner she complained several times of pain, and drank some chicory water as a stomachic. "Putting the cup down with one hand, with the other she pressed her side, and said in a voice which betokened much suffering: 'Ah! what a stitch in the side! Ah! What pain! I can bear no more.' Speaking these words she flushed, and, a moment afterwards, turned pale and with a wan lividity which astonished us all. She kept crying out, and begged to be carried away, for she could no longer hold up."

Other Cases. Bonetus, of Geneva, in his *Sepulchretum sive Anatomia Practica* (Geneva, 1679, Leonard Chouët; Cramer & Perachon, 1700) quotes the history, told by John Bauhin, of a doctor's wife, 18 years old, who had passed blood in her stools, and who died on the fourth day of an attack of peritonitis, which was shown at postmortem examination to be due to *the perforation of a gastric ulcer.*

The report of Courtial, of Toulouse, "sur un trou trouve au ventricule d'une personne de la mesme ville," appeared in Journal Des Scavans, Tome Seizieme, 554-556, Oct. 25, 1688, Amsterdam, Wolfgang, Waesberge et al., 1689. ". . . Quand on ouvrit le corps, et que l'on visita le ventricule, on trouva vers la partie superieure, moyenne, et anterieure, un trou de figure ovale, long d'un pouce et demi, dont la circonference estoit bordee d'un corps calleux, qui ne ressembloit pas mal à un galon qui borderoit les deux cotez d'une étofe."

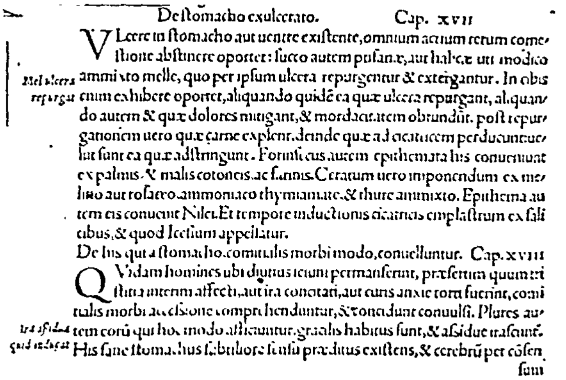


Theophile Bonetus, 1679; 1700, *Sepulchretum*

Muralt, in his *Curationes* (or Exércitationes?) *medicae observationibus & experimentis anatomicis mixtae* . . . Amsterdam, 1688, reports a case of perforations of the duodenum occurring in a soldier. I believe there is a copy of this book in the Bibliothéque Nationale (Paris), a volume of 593 pages. Dr. Meyer-Ahrens published an article entitled "Die Arztfamilie von Muralt," in the *Schweizerische zeitschrift für Heilkunde*, Bern, 1861-1863, vol. 1, pp. 268-289, 423-436, and vol. 2, pp. 25-47. This contains an account of the *Exércitations* (see vol. 1, p. 281), according to a personal communication from Dr. Archibald Malloch, of New York.

Panthot's report appears in the *Journal Des Scavans*, 1695 (Aug. 1), Tome XXIII, ed. 2, Revue & Augmentée, Amsterdam, Janssons à Waesberge, 1709. Mr. de Rhodes, Vice-Doyen du College de Lion, the patient, was a man of delicate constitution and was subject to migraine, vomiting and colic. "On decouvrit ensuite que la membrane veloutee estoit toute consumée et *ulcerée* en plusieurs endroits, mais que le mal principal estoit au Pilore, qui estoit dur, épais, et ulcer by suggesting *immediate antacid therapy*. The use of the above combination is suggested.

These few comments are published by the writer in the hope that others interested may give this combined form of antacid therapy a fair trial. It appears to the writer and to many of his colleagues that many of the patients suffering from ulcer, with marked hyperacidity, are promptly given appreciable relief, with definite evidence of rapid healing following the control of the acid secretion.



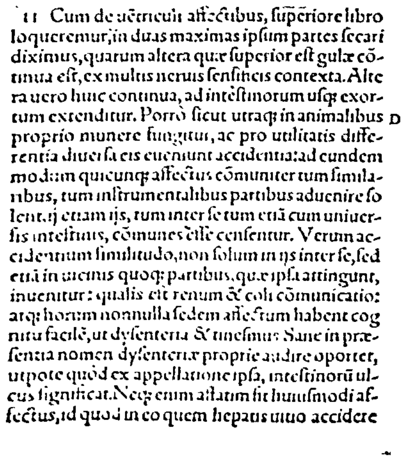
De ſtomacho exulcerato. Cap. XVII

VLcere in ſtomacho aut uentre exiſtente, omnium acrium rerum comeſtione abſtinere oportet: ſucco autem ptiſanæ, aut halicæ uti modico
Mel ulcera ammixto melle, quo per ipſum ulcera repurgentur & extergantur. In cibis
repurgat enim exhibere oportet, aliquando quidē ea quæ ulcera repurgant, aliquando autem & quæ dolores mitigant, & mordacitatem obtundūt. poſt repurgationem uero quæ carne explent, deinde quæ ad cicatricem perducunt, cuiuſmodi ſunt ea quæ adſtringunt. Forinſecus autem epithemata his conueniunt ex palmis & malis cotoneis ac ſannis. Ceratum uero imponendum ex melino aut roſaceo, ammoniaco thymiamate, & thure ammixto. Epithema autem eis conuenit Nilei. Et tempore inductionis cicatricis emplaſtrum ex ſalicibus, & quod Iceſium appellatur.

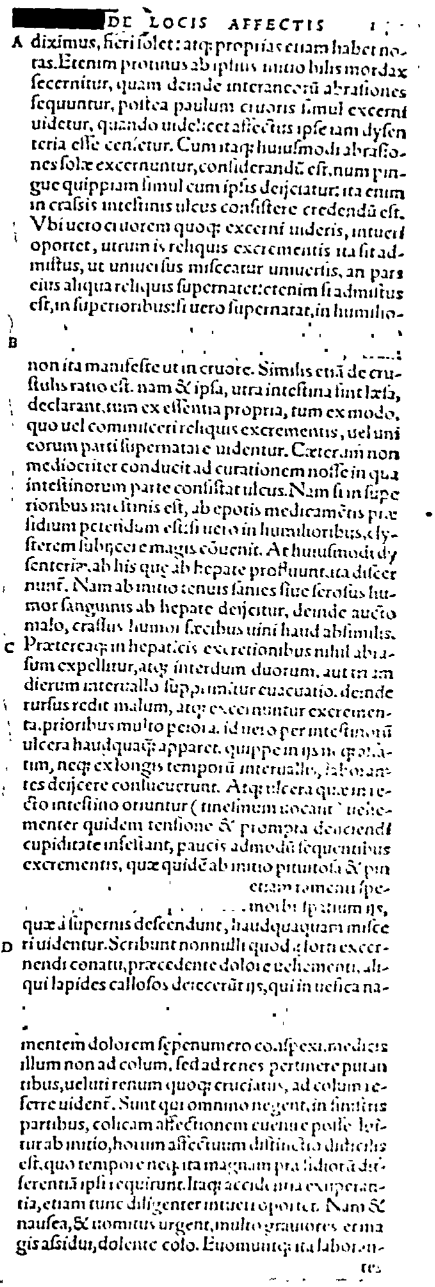
De his qui a ſtomacho, comitialis morbi modo, conuelluntur. Cap. XVIII

QVidam homines ubi diutius ieiuni permanſerint, præſertim quum triſtitia interim affecti, aut ira concitati, aut curis anxie torti fuerint, comitialis morbi acceſsione comprehenduntur, & concidunt conuulſi. Plures au-
Ira aſsidua tem eorū qui hoc modo affliguntur, gracilis habitus ſunt, & aſsidue iraſcunt.
quid noceat His ſane ſtomachus ſenſibiliore ſenſu præditus exiſtens, & cerebrū per cōſen
ſum

Aëtius Amidenus' (502-575 A.D.) *Tetrabiblos*, "De stomacho exulcerato," Quaternionis Tertii, III, Seros I, Caput XVII, Froben, 1549, p. 491. Also, Aëtius, *Tetrabiblos*, Librorum XVI, 1533-1535.



11 Cum de uentriculi affectibus, ſuperiore libro loqueremur, in duas maximas ipſum partes ſecari diximus, quarum altera quæ ſuperior eſt gulæ cōtinua eſt, ex multis neruis ſenſiticis contexta. Altera uero huic continua, ad inteſtinorum uſq; exortum extenditur. Porrò ſicut utraq; in animalibus proprio munere fungitur, ac pro utilitatis differentia diuerſa eis eueniunt accidentia: ad eundem modum quicunq; affectus cōmuniter tum ſimilaribus, tum inſtrumentalibus partibus aduenire ſolent, ij etiam ijs, tum inter ſe tum etiā cum uniuerſis inteſtinis, cōmunes eſſe cenſentur. Verum accidentium ſimilitudo, non ſolum in ijs inter ſe, ſed etiā in uicinis quoq; partibus, quæ ipſa attingunt, inuenitur: qualis eſt renum & coli cōmunicatio: atq; horum nonnulla ſedem affectum habent cognitu facilē, ut dyſenteria & teneſmus. Sane in præſentia nomen dyſenteriæ proprie audire oportet, utpote quòd ex appellatione ipſa, inteſtinorū ulcus ſignificat. Neq; enim aſſatim fit huiuſmodi affectus, id quod in eo quem hepatis uitio accidere



[redacted] DE LOCIS AFFECTIS

A diximus, fieri ſolet: atq; proprias etiam habet notas. Etenim protinus ab ipſius initio bilis mordax ſecernitur, quam deinde interaneorū abraſiones ſequuntur, poſtea paulum cruoris ſimul excerni uidetur, quando uidelicet affectus ipſe iam dyſenteria eſſe cenſetur. Cum itaq; huiuſmodi abraſiones ſolæ excernuntur, conſiderandū eſt, num pingue quippiam ſimul cum ipſis deijciatur: ita enim in craſsis inteſtinis ulcus conſiſtere credendū eſt. Vbi uero cruorem quoq; excerni uideris, intueri oportet, utrum is reliquis excrementis ita ſit admiſtus, ut uniuerſus miſceatur uniuerſis, an pars eius aliqua reliquis ſupernatet: etenim ſi admiſtus eſt, in ſuperioribus: ſi uero ſupernatat, in humilio-

B

non ita manifeſte ut in cruore. Similis etiā de cruſtulis ratio eſt. nam & ipſa, utra inteſtina ſint læſa, declarant, tum ex eſſentia propria, tum ex modo, quo uel commiſceri reliquis excrementis, uel unicorum parti ſupernatare uidentur. Cæterùm non mediocriter conducit ad curationem noſſe in qua inteſtinorum parte conſiſtat ulcus. Nam ſi in ſuperioribus inteſtinis eſt, ab epotis medicamētis præſidium petendum eſt: ſi uero in humilioribus, clyſterem ſubijcere magis cōuenit. At huiuſmodi dyſenteriæ, ab his quę ab hepate profluunt, ita diſcernunt. Nam ab initio tenuis ſanies ſiue ſeroſus humor ſanguinis ab hepate deijcitur, deinde aucto malo, craſſus humor fæcibus uini haud abſimilis.

C Prætereaq; in hepaticis excretionibus nihil abraſum expellitur, atq; interdum duorum, aut trium dierum interuallo ſupprimitur euacuatio. deinde rurſus redit malum, atq; excernuntur excrementa, prioribus multo peiora. id uero per inteſtinorū ulcera haudquaq; apparet. quippe in ijs nec ſpiſſatum, neq; ex longis temporū interuallis, laborantes deijcere conſueuerunt. Atq; ulcera quæ in recto inteſtino oriuntur (teneſmum uocant) uehementer quidem tenſione & prompta deijciendi cupiditate infeſtant, paucis admodū ſequentibus excrementis, quæ quidē ab initio pituitoſa & pin

etiam ramenta ſpe-

morbi ſpatium ijs,

quæ à ſupernis deſcendunt, haudquaquam miſceri uidentur.

D Scribunt nonnulli quod à forti excernendi conatu, præcedente dolore uehementi, aliqui lapides calloſos deiecerūt ijs, qui in ueſica na-

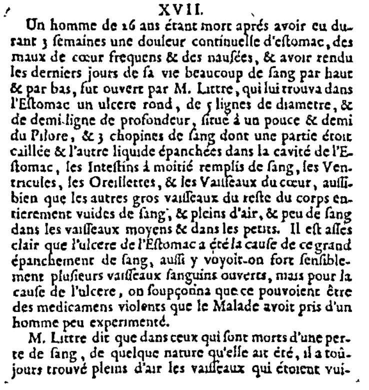
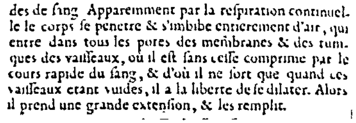
mentem dolorem ſępenumero conſpexi. medicis illum non ad colum, ſed ad renes pertinere putantibus, ueluti renum quoq; cruciatus, ad colum referre uident. Sunt qui omnino negent, in finitimis partibus, colicam affectionem euenire poſſe. Igitur ab initio, horum affectuum diſtinctio difficilis eſt, quo tempore neq; ita magnam præſidiorū differentiā ipſi requirunt. Itaq; accidentia exuperantia, etiam tunc diligenter intueri oportet. Nam & nauſea, & uomitus urgent, multo grauiores et magis aſsidui, dolente colo. Euomuntq; ita laboran-
tes

Cl. Galen, "De Locis Affectis," (VI) Liber sextus, Column 139, Cap. III, "Galeni De Affectorum Locorum Notitia," in *Galeni Operum Tertius Tomus Classem Scriptorum*, Basileae, 1549, Froben. (Cl. Galen, Sept. 22, 130 A.D.-200 A.D.?)

Letter XXIX, Article 16, of *"De Sedibus")*.

EIGHTEENTH CENTURY

Alexis Littre, in 1704, reported a case in which death followed hematemesis from a gastric ulcer.

XVII.

Un homme de 26 ans étant mort aprés avoir eu durant 3 ſemaines une douleur continuelle d'eſtomac, des maux de cœur frequens & des nauſées, & avoir rendu les derniers jours de ſa vie beaucoup de ſang par haut & par bas, fut ouvert par M. Littre, qui lui trouva dans l'Eſtomac un ulcere rond, de 5 lignes de diametre, & de demi-ligne de profondeur, ſitué à un pouce & demi du Pilore, & 3 chopines de ſang dont une partie étoit caillée & l'autre liquide épanchées dans la cavité de l'Eſtomac, les Inteſtins à moitié remplis de ſang, les Ventricules, les Oreillettes, & les Vaiſſeaux du cœur, auſſi-bien que les autres gros vaiſſeaux du reſte du corps entierement vuides de ſang, & pleins d'air, & peu de ſang dans les vaiſſeaux moyens & dans les petits. Il eſt aſſes clair que l'ulcere de l'Eſtomac a été la cauſe de ce grand épanchement de ſang, auſſi y voyoit-on fort ſenſiblement pluſieurs vaiſſeaux ſanguins ouverts, mais pour la cauſe de l'ulcere, on ſoupçonna que ce pouvoient être des medicamens violents que le Malade avoit pris d'un homme peu experimenté.

M. Littre dit que dans ceux qui ſont morts d'une perte de ſang, de quelque nature qu'elle ait été, il a toûjours trouvé pleins d'air les vaiſſeaux qui étoient vuides de ſang. Apparemment par la reſpiration continuelle le corps ſe penetre & s'imbibe entierement d'air, qui entre dans tous les pores des meñbranes & des tuniques des vaiſſeaux, où il eſt ſans ceſſe comprime par le cours rapide du ſang, & d'où il ne ſort que quand ces vaiſſeaux etant vuides, il a la liberte de ſe dilater. Alors il prend une grande extenſion, & les remplit.

Left and above, Alexis Littre's case (1704).

Albertus von Haller (October 8, 1708—Dec. 12, 1777), in his *Opuscula Pathologica,* [Latin Edition, Lausannae, 1755, Observation 21, pp. 44-45; Observation 23, pp. 47-48; and in the English Edition, London, 1756, Observation 21, pp. 44-46, and Observation 23, pp. 48-49] reports two interesting cases: Obs. 21, "Obesitas Male Curata;" and Obs. 23, "Ulcus Coli in ventriculum patens."

Maximilian Preuss (1715), in his report above mentioned, speaks of

> "De ventriculi perforati, hepatisque per hocce foramen illius cavitatem ex parte subintrantis illudque claudentis, cum eoque connexione cartilagineo membranacea firmiter concreti ac connati quasi, aliorumque in corpore muliebri, constitutione summe praeternaturali." He continues as follows: "Illa nempe Regina Catherina nomine, anno aetatis circiter quarto decimo aut paulo ante, priusquam prima menstrua erumperent, dolore quodam anxiosa circa sinistrum hypochondrium scrobiculum: . . . de doloribus circa lumbos, subluxationem comitari consuetis, ac molestissimum quendam circa ventriculi regionem sensum cum inanibus vomendi conatibus querebatur . . . nec non artus intumescere incipiebant, donec summe & ad rupturae ferme metum tenso abdomine, postremis diebus, multis faecibus nigricantibus excretis, quartus Martii des aelatis anno 44-, diu exoptatam Analysin afferet . . . Ventriculus ipse multo sanguine congrummato repletus. Fundus ventriculi per totam longitudinem ad pylorum usque, scirrhoso glandulosa excrescentia inaequali, & hinc inde plus quam transversi digiti latitudine protuberante, obsessus, ipse que ventriculus in duos quasi saccos diremptus. Hepar, lien, renes, uterus naturalia & integra . . ."

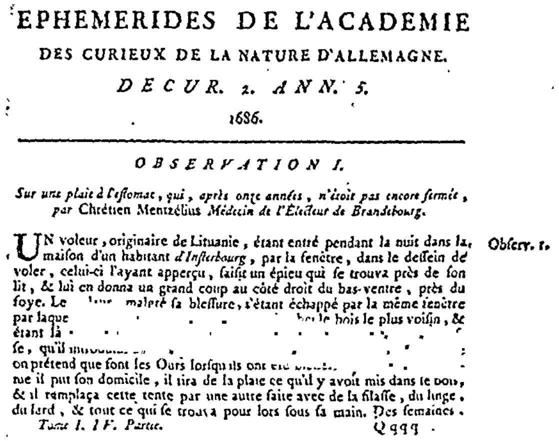
J. G. Volcamerus reported a case of "De Foramine Ventriculi" (Observation No. 229, in Miscel. Curiosa — Nat. Curios., sive Ephemeridium — Decur. I, Ann. II, Editio Tertia, Klosium, Francofurti & Lipsiæ, 1725): ". . . per œsophagum, pauló supra superius ventriculi orificium, ruptum, liquorem illum nigricantem in ventriculum congessit, unde per intervalla vomitu ista saburra prodiit."

Christopher Rawlinson, in 1729, reported a case of *perforated gastric ulcer* under the title, "Of a preternatural Perforation in the Upper Part of the Stomach" [Philosophical Trans. Roy. Soc., London, 35: No. 400, p. 361, 1727-1728; Abridged Vol. VII, 1724-1734, pp. 212-213, 1809, London].

> James Skidmore had complained for three or four years of a violent pain in his stomach and bowels, never being able to rest in his bed at night, until he had vomited up the greatest part of what he had eaten or had drunk the day before. At necropsy, the stomach was found perforated in its upper part, about the middle

II. HISTORICAL NOTES AND CONNOTATIONS

It is of interest, historically, to note that gastric disorders associated, no doubt, with hyperacid states were treated in Hippocratic and Talmudic times. Those of us who have studied the fascinating and lengthy story of ulcer of the stomach and duodenum realize that it goes back, perhaps, to the neolithic or alluvial Period (3000-1500 B. C.) and the early Egyptian days, centuries before the compilation of the Papyrus Ebers (circa 1500 B. C.). The medicine men of Homer's (900 B. C.) times, and perhaps the "good physicians both," Machaon and Podalirius (sons of Aesculapius) of the Iliad; Hippocrates (460-370 B. C.); Celsus (20 A. D.); Galen (130-200 A. D.) and the other ancients knew of gastric disease and ulcer of the stomach. Aëtius Amidenus (502-575 A. D.), in his medicinal "Tetrabiblos," Froben, 1549 (Quaternionis Tertii III: Sermo Primus I, et Ex ordine nonus (IX), Caput XVII, page 491) discusses "De stomacho exulcerato" and speaks of *"Ulcere in stomacho* au ventre existente, etc." Avicenna (980-1036 A. D.) treated ulcer of the stomach ("Canonis medicinae," Venice, Press of Petrus Maufer, 1486, Liber III, Fen. XIII, Tract. IV, Capitulum XII, "De vulneribus i stomacho"; "Stomacho . . . ulcera . . . "; and Capitulum XIV, "De cura ulcerum stomachi").



EPHEMERIDES DE L'ACADEMIE
DES CURIEUX DE LA NATURE D'ALLEMAGNE.
DECUR. 2. ANN. 5.
1686.

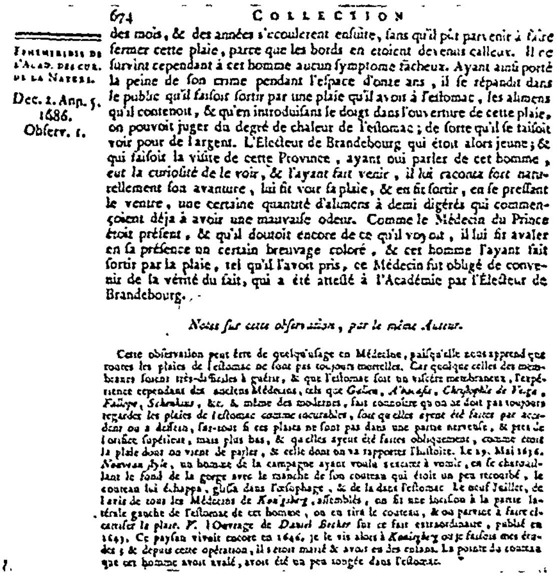
OBSERVATION I.

Sur une plaie à l'eſtomac, qui, après onze années, n'étoit pas encore fermée, *par* Chrétien Mentzélius *Médecin de l'Électeur de Brandebourg.*

Obſerv. 1.

UN voleur, originaire de Lituanie, étant entré pendant la nuit dans la maiſon d'un habitant *d'Inſterbourg*, par la fenêtre, dans le deſſein de voler, celui-ci l'ayant apperçu, ſaiſit un épieu qui ſe trouva près de ſon lit, & lui en donna un grand coup au côté droit du bas-ventre, près du foye. Le [illegible] malgré ſa bleſſure, s'étant échappé par la même fenêtre par laque [illegible] le bois le plus voiſin, & étant là [illegible] ſe, qu'il [illegible] on prétend que font les Ours lorſqu'ils ont été [illegible] me il put ſon domicile, il tira de la plaie ce qu'il y avoit mis dans le [illegible], & il remplaça cette tente par une autre faite avec de la filaſſe, du linge, du lard, & tout ce qui ſe trouva pour lors ſous ſa main. Des ſemaines

Tome I. IV. Partie. Qqqq



674 COLLECTION

EPHEMERIDES DE L'ACAD. DES CUR. DE LA NATURE.
Dec. 2. Ann. 5. 1686.
Obſerv. 1.

des mois, & des années s'écoulerent enſuite, ſans qu'il pût parvenir à faire fermer cette plaie, parce que les bords en étoient devenus calleux. Il ne ſurvint cependant à cet homme aucun ſymptome fâcheux. Ayant ainſi porté la peine de ſon crime pendant l'eſpace d'onze ans, il ſe répandit dans le public qu'il faiſoit ſortir par une plaie qu'il avoit à l'eſtomac, les alimens qu'il contenoit, & qu'en introduiſant le doigt dans l'ouverture de cette plaie, on pouvoit juger du degré de chaleur de l'eſtomac; de ſorte qu'il ſe faiſoit voir pour de l'argent. L'Electeur de Brandebourg qui étoit alors jeune; & qui faiſoit la viſite de cette Province, ayant oui parler de cet homme, *eut la curioſité de le voir, & l'ayant fait venir, il lui raconta fort natu*rellement ſon avanture, lui fit voir ſa plaie, & en fit ſortir, en ſe preſſant le ventre, une certaine quantité d'alimens à demi digérés qui commençoient déja à avoir une mauvaiſe odeur. Comme le Médecin du Prince étoit préſent, & qu'il doutoit encore de ce qu'il voyoit, il lui fit avaler en ſa préſence un certain breuvage coloré, & cet homme l'ayant fait ſortir par la plaie, tel qu'il l'avoit pris, ce Médecin fut obligé de convenir de la vérité du fait, qui a été atteſté à l'Académie par l'Électeur de Brandebourg.

Notes ſur cette obſervation, par le même Auteur.

Cette obſervation peut être de quelqu'uſage en Médecine, puiſqu'elle nous apprend que toutes les plaies de l'eſtomac ne ſont pas toujours mortelles. Car quoique celles des membranes ſoient très-difficiles à guérir, & que l'eſtomac ſoit un viſcére membraneux, l'expérience cependant des anciens Médecins, tels que *Galien*, *Albucaſis*, *Chriſtophle de Vega*, *Fallope*, *Schenkius*, &c. & même des modernes, fait connoître qu'on ne doit pas toujours regarder *les plaies de l'eſtomac comme incurables*, *ſoit qu'elles ayent été faites par accident ou à deſſein*, ſur-tout ſi ces plaies ne ſont pas dans une partie nerveuſe, & près de l'orifice ſupérieur, mais plus bas, & qu'elles ayent été faites obliquement, comme étoit la plaie dont on vient de parler, & celle dont on va rapporter l'hiſtoire. Le 29. Mai 1636. *Nouveau ſtyle*, un homme de la campagne ayant voulu s'exciter à vomir, en ſe chatouillant le fond de la gorge avec le manche de ſon couteau qui étoit un peu recourbé, le couteau lui échappa, gliſſa dans l'œſophage, & de là dans l'eſtomac. Le neuf Juillet, de l'avis de tous les Médecins de *Konigsberg*, aſſemblés, on fit une inciſion à la partie latérale gauche de l'eſtomac de cet homme, on en tira le couteau, & on parvint à faire cicatriſer la plaie. *V.* l'Ouvrage de *Daniel Becker* ſur ce fait extraordinaire, publié en 1643. Ce payſan vivoit encore en 1646, je le vis alors à *Konigsberg* où je faiſois mes études; & depuis cette opération, il s'étoit marié & avoit eu des enfans. La pointe du couteau que cet homme avoit avalé, avoit été un peu rongée dans l'eſtomac.

Above and right, Mentzelius' Case.

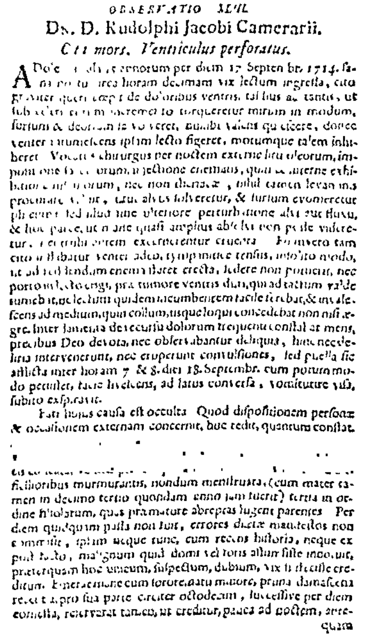
Galen (130-200 A. D.), in his "De locis affectis," Liber V, Cap. 6, on pathology, mentions ulcer of the stomach.

This same writer, in "De locis affectis," Liber 6, Column 139, Cap. II (Basileae, 1549), says, "Cum de ventriculi affectibus superiore libro loqueremur in duas maximas ipsum partes secari, diximus: quarum altera quae superior est, gulae continua est, ex multis nervis sensificis Contexta: altera vero huic continua ad intestinorum usque exortum extenditur."

Everard Home (Philosophical Transactions, London, 1807) also divides the stomach into two parts: cardiac and pyloric.

Celsus (20 A. D.), in his "De Medicina" (printed 1478), Liber IV, Cap. 5, lays down rules for its treatment, acceptable even today. "Adhibendi lenes et glutinosi cibi sed citra satieta-

Physico-Medica Academiae naturae curiosorum, IX, Obs. V, pp. 16-17, 1752, Norimbergæ]; Maximiliani Preussii ["Ventriculi perforati," *Academiae Naturae curiosorum Ephemerides*, Centuria III et IV, Observatio XIII, pp. 26-29, 1715, Noribergæ]; Geoffroy ["Observation sur une ouverture a'l'estomac," *Histoire de la Soc. Roy. de Médecine*, 1780-81, IV· 262-263, 1785, Paris].



OBSERVATIO XLIII.

Dn. D. Rudolphi Jacobi Camerarii.

Cita mors. Ventriculus perforatus.

R. J Camerarius (1717), *Academiae C-L C naturae curiosorum Ephemerides sive Observationum medico-physicarum Centuria V et VI*, Noribergae Wolfganger Michahelles, anno 1717, observatio 43, pp 62-65 (Sept 17, 1714).

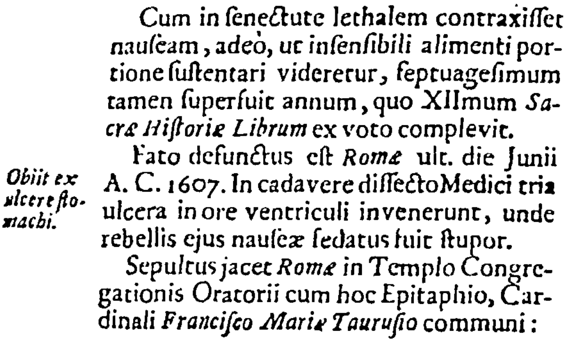
Sir G. Baker, in 1772, referred to a case of *duodenal ulcer* in a gentleman who was treated for "atra bilis." After death the "atra bilis" was found to be blood from an ulcer at the beginning of the duodenum.

James Carmichael Smyth (March 2, 1790) reported a case of a young lady, 15 years of age, whose sudden death was occasioned by an *ulcer in the stomach* [Medical Communications, London, II: *467-471, 1790, Joseph Johnson*].

NINETEENTH CENTURY

Rayer (Hospital De La Charité) reports a case of *perforation of the duodenum (Gazette des Hôpitaux* I: 137-138, Mar. 21, 1839) and, what is, of especial historical interest, in this article makes reference to Penada's report of the case of Domenico Miazzo who died of perforating ulcer of the duodenum after much suffering. This reference by Rayer was not known to Sir Arthur F. Hurst, of London, and Dr. Archibald Malloch, of New York, when they published reports of Penada's very interesting and accurately described case of perforating ulcer of the duodenum (Padova, 1793). Rayer also refers to J. Muralto ("Curationes medicæ, observationibus, etc.," Amsterdam, 1688): "Muralto a trouvé, dans le cadavre d'un soldat, le duodenum perforé en deux endroits."

Jacopo Penada (born in Padua, Dec. 11, 1748; died Feb. 23, 1828) published an account *of a perforating ulcer of the duodenum* in his book "Saggio / D'Osservazioni, E. memorie / sopra Alcuni Casi Singolari / Riscontrati nell' Esercizio della Medicina, / e della Anatomia Pratica / dal dottor / Jacopo Penada M. F. / Socio Corrispondente della Reale Accademia delle Scienze, / Lettere, ed Arti / Di Padova ec. ec. / In Padova MDCCXCIII / Per Approvazione." I believe Dr. Charles Singer (Kilmarth, Par, Cornwall, England) owns a copy of Penada's book. This quarto volume of 146 pages contains nine chapters or "osservazioni," of which the third one, Christianus Mentzelius (1686), T. Bonetus (1679), J. Rhodius (1676), Fehrius (1689), S. Grassius (1695), Johannes M. Vorwaltner (1699), Alexis Littre (1704), Rudolph J. Camerarius (1717), Johannes A. Goerizius (1719), J. J. Courtial (1688), Du Verney (1704), S. J. P. Housset (1693), M. Preusius (1719), Christopher Rawlinson (1729), August Wencker (1735), Morgagni (1737), Christian Wencker (1743), Janus Plancus (1748), J. F. Henckel (1712-1779), J. B. Verduc, Jacobus Hollerius Stempanus (died 1562), Joannes Scultetus (1595-1645), Domenico Panaroli (1654), C. Stalpart van der Wiel (1727), P. Salmuth, O. Desnoz (1759), Vetter, Westring, Jacquinelle, Laporte (1772), du Rocher (1745), Lieutaud, Hallé (1802), Citizen Bellot (1802), Jacopo Penada (1793), Matthew Baillie (1793), J. Muralto, B. Gooch, H. Bassius (1731), Godot (1773), Smyth (1790), Jean Cruveilhier (1791-1873) and Abercrombie (1824).



Cum in ſenectute lethalem contraxiſſet nauſeam, adeò, ut inſenſibili alimenti portione ſuſtentari videretur, ſeptuageſimum tamen ſuperfuit annum, quo XIImum *Sacræ Hiſtoriæ Librum* ex voto complevit.

Obiit ex ulcere ſtomachi.

Fato defunctus eſt *Romæ* ult. die Junii A. C. 1607. In cadavere diſſectoMedici tria ulcera in ore ventriculi invenerunt, unde rebellis ejus nauſeæ ſedatus fuit ſtupor.

Sepultus jacet *Romæ* in Templo Congregationis Oratorii cum hoc Epitaphio, Cardinali *Franciſco Mariæ Tauruſio* communi:

Caesar Baronius Cardinalis, Obit. Junii A.C. 1607.
Paul Freher, Theatrum Virorum, 1688, Noribergae.

The case of Cardinal Cesare Baronius (died June, 1607), as reported by Paul Freher (1688) (*Obiit ex ulcere stomachi*: "In cadavere dissecto Medici tria ulcera in ore ventriculi invenerunt, unde rebellis ejus nauseae sedatus fuit stupor"), is entirely overlooked by present day writers.

Other early reports were by C. G. G. Kade (1752), Fearon, D. W. Nebel (1782), J. Morin (1800), Citizens Corvisart and Leroux (1802), Lassus and Percy (1802), Lorey (1808), Percy and Laurent (1819), Amedée Lefevre (1842), Anton J. R. Jacksch (1844), C. Rokitansky (1836, 1839), Coze (1790), Breschet, Aillaud, Baron, J. J. Leroux [Observation sur une perforation de l'estomac, Jour. de Méd., Chir., etc., Paris, 15: 239-249 (Apr.) 1808], Van Swieten (1700-1772), and Adamus Christianus Thebesius (1715).

Many of these early recorded cases of gastric and duodenal ulcers, perforations and gastric fistulae have been overlooked entirely by American and English students of the subject.

SIXTEENTH CENTURY REPORTS

Dodonaeus (1517-1585), under the title "*De Ulcere Ventriculi*" (1581) reported the case of "Honesta quaedam matrona, annos (plus minus) LX. nata, ex ore spiritum foetentem multis emiserat annis: . . . dolor circa ventriculi regionem assiduus, non tamen valdè molestus; . . . *Ventriculus* huis exterius ab omni parte superficietenus *exulceratus* extitit . . . " [Medicinalium Obser-

(1841), Crisp (1843), Parjzek (1843), Peste (1844), Marcus (1845), E. Young (1845), Peacock (1846), Lawrence (1846), Orelli (1846), Williams (1846), Russell (1848), Geyer (1849), Wartena (1849), Ekman (1850), Beyer (1853), and Lees (1856). Craigie (1835) reported three cases of ulcerative destruction of the coats of the stomach [Edinburgh Med. & S. J. 44: 262-277, 1835], in which "the ulcerated aperture was situate in the small arch of the stomach"; he read his report before the Edinburgh Medico-Chirurgical Society October 1, 1835.

Perforation of the duodenum in early medical literature has been recorded by many writers following the previously mentioned earliest reports by J. Muralt (1688) and J. Penada (1793). Among nineteenth century reports are those by A. Girard (1804), C. Hastings (1828-1829), Robert (1828), S. C. Wait (1841) and Lenepveu (1839). Lenepveu presented his report at the March, 1839, meeting of the Société Anatomique de Paris under the Presidence de M. *Cruveilhier*, as a spontaneous perforation of an old ulcer of the anterior surface of the duodenum. Others are Rayer (March 21, 1839), C. M. Gibert (April 27, 1852), Klinger (1861), Krauss (1865), C. Alloncle (1883) and Perry and Shaw (1894). F. Trier (1863, Copenhagen) speaks of *ulcus corrosivum duodeni*.

A case of ulceration of the duodenum with formation of a hepatico-diaphragmatic pouch, occurring in a patient aged 68 years, is reported by Drake, Rives and Gross (Western J. M. & Phys. Sc., Cincinnati, XI: 510-514, 1838). There was a perforation on the upper wall of the duodenum, one inch below the pylorus. The patient died May 13, 1837, 19 days after the excruciatingly painful epigastric attack and spasm. Professor Gross performed the necropsy. Professors Drake and Rives were the attending physicians.

In the case of Charles Hastings cited previously [Midland Medical and Surgical Reporter, Worcester, I: 292-293, No. 4 (May) 1829] the patient was a woman aged 30 years who died March 31, 1813. In the duodenum, beyond the part into which the biliary duct entered, an ulcer larger than a crown piece was found. The ulcer was a *cancerous* kind; its edges were very ragged and everted. The surface of the ulcer was very irregular from fungous excrescences. The coats of the intestine around the ulcerated part were much thickened.

W. Bainbridge in his report, "Cases of Perforation of the Stomach and Duodenum" [Lancet II: 56-59 (April 9) 1842], describes two cases of perforation of the stomach (woman, aged 60; girl, aged 18) and two cases of perforation of the duodenum. He refers to Hodgkin's observations that the *"valvular pylori" portion of the duodenum is peculiarly prone to disease, and often lacerable.*

The case of duodenal perforation reported by Joh. Heinr. Beck ["Fall von spontaner Perforation des Zwölffingerdarms, *Zeitschrift für die Staatsarzneikunde* (A. Henke, Erlangen), 15th *Ergänzungsheft* (Zum elften Jahrgange gehörend), pp. 60-86, 1831] was that of a miller, aged 35 years, six feet tall and of choleric temperament (Thaddäus H.).

Instances of perforation of the duodenum were reported by J. W. Ash [Med. Exam., Phila., 6: 169, Aug. 5, 1843]; J. G. Bailey ["Perforation of the Duodenum followed by Fatal Peritonitis in a Female the Day after Marriage," Med. Times, London, 15: 223, Dec. 19, 1846]; W. J. Little ["Case of Chronic Ulceration of the Duodenum and Perforation," Lancet, London II: 6, (July 5) 1845]; Lambert [Ulcération du duodénum. Occlusion du canal cholédoque à son embouchure," Gaz. d. hôp., Paris, 2: 2d Series, 379 (Aug. 13) 1840, "le chevalier de l'âge de cinquante ans, célibataire . . . "]; Alex
servation d'une perfo
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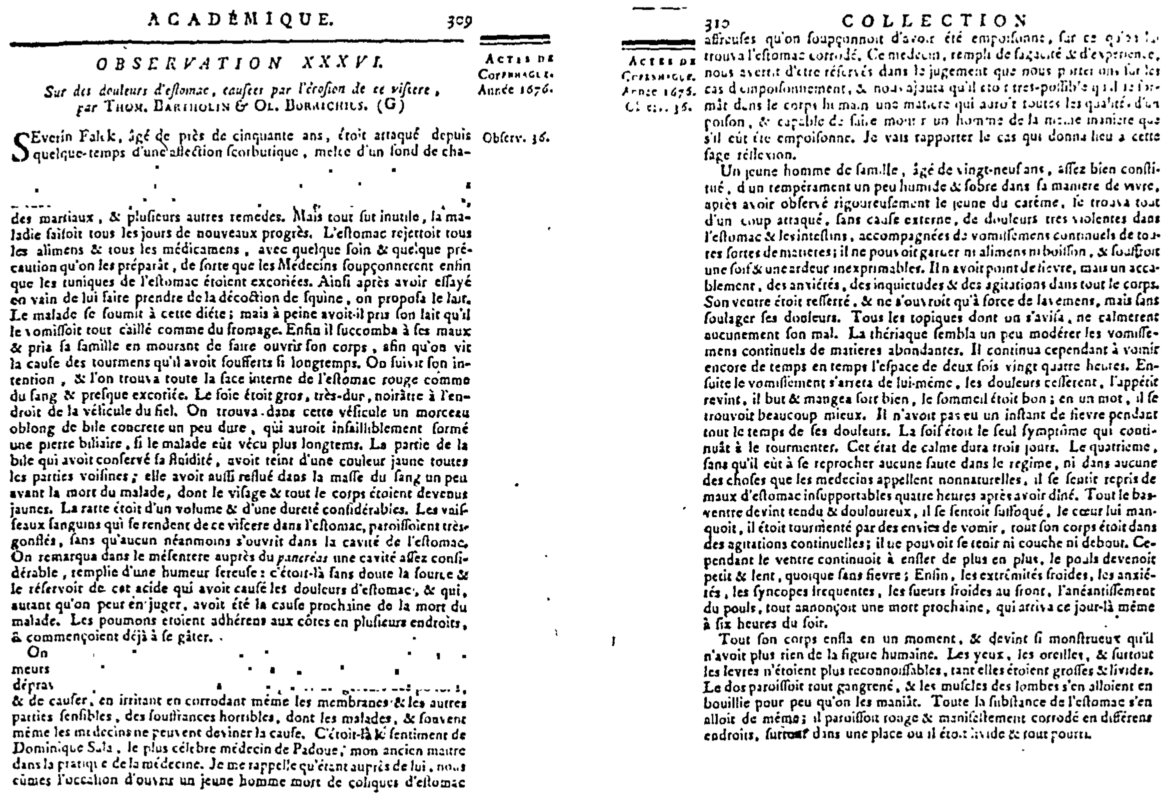


ACADÉMIQUE. 309

OBSERVATION XXXVI.

Sur des douleurs d'eſtomac, cauſées par l'éroſion de ce viſcere, par THOM. BARTHOLIN & OL. BORRICHIUS. (G)

ACTES DE COPPENHAGUE. Année 1676.

Obſerv. 36.

SEverin Falck, âgé de près de cinquante ans, étoit attaqué depuis quelque-temps d'une affection ſcorbutique, mêlée d'un fond de cha- [illegible]

[illegible] des martiaux, & pluſieurs autres remedes. Mais tout fut inutile, la maladie faiſoit tous les jours de nouveaux progrès. L'eſtomac rejettoit tous les alimens & tous les médicamens, avec quelque ſoin & quelque précaution qu'on les préparât, de ſorte que les Médecins ſoupçonnerent enfin que les tuniques de l'eſtomac étoient excoriées. Ainſi après avoir eſſayé en vain de lui faire prendre de la décoction de ſquine, on propoſa le lait. Le malade ſe ſoumit à cette diéte; mais à peine avoit-il pris ſon lait qu'il le vomiſſoit tout caillé comme du fromage. Enfin il ſuccomba à ſes maux & pria ſa famille en mourant de faire ouvrir ſon corps, afin qu'on vit la cauſe des tourmens qu'il avoit ſoufferts ſi longtemps. On ſuivit ſon intention, & l'on trouva toute la face interne de l'eſtomac rouge comme du ſang & preſque excoriée. Le foie étoit gros, très-dur, noirâtre à l'endroit de la véſicule du fiel. On trouva dans cette véſicule un morceau oblong de bile concrete un peu dure, qui auroit infailliblement formé une pierre biliaire, ſi le malade eût vécu plus longtems. La partie de la bile qui avoit conſervé ſa fluidité, avoit teint d'une couleur jaune toutes les parties voiſines; elle avoit auſſi reflué dans la maſſe du ſang un peu avant la mort du malade, dont le viſage & tout le corps étoient devenus jaunes. La ratte étoit d'un volume & d'une dureté conſidérables. Les vaiſſeaux ſanguins qui ſe rendent de ce viſcere dans l'eſtomac, paroiſſoient très-gonflés, ſans qu'aucun néanmoins s'ouvrît dans la cavité de l'eſtomac. On remarqua dans le méſentere auprès du *pancréas* une cavité aſſez conſidérable, remplie d'une humeur ſereuſe: c'étoit-là ſans doute la ſource & le réſervoir de cet acide qui avoit cauſé les douleurs d'eſtomac, & qui, autant qu'on peut en juger, avoit été la cauſe prochaine de la mort du malade. Les poumons étoient adhérens aux côtes en pluſieurs endroits, & commençoient déjà à ſe gâter.

On [illegible]

meurs [illegible]

dépray [illegible]

& de cauſer, en irritant en corrodant même les membranes & les autres parties ſenſibles, des ſouffrances horribles, dont les malades, & ſouvent même les médecins ne peuvent deviner la cauſe. C'étoit-là le ſentiment de Dominique Sala, le plus célebre médecin de Padoue, mon ancien maître dans la pratique de la médecine. Je me rappelle qu'étant auprès de lui, nous eûmes l'occaſion d'ouvrir un jeune homme mort de coliques d'eſtomac

310 COLLECTION

ACTES DE COPPENHAGUE. Année 1675. Obſerv. 35.

affreuſes qu'on ſoupçonnoit d'avoir été empoiſonné, ſur ce qu'on lui trouva l'eſtomac corrodé. Ce medecin, rempli de ſagacité & d'experience, nous avertit d'être réſervés dans le jugement que nous porterions ſur les cas d'empoiſonnement, & nous ajouta qu'il étoit très-poſſible qu'il ſe formât dans le corps humain une matiere qui auroit toutes les qualités d'un poiſon, & capable de faire mourir un homme de la même maniere que s'il eût été empoiſonné. Je vais rapporter le cas qui donna lieu à cette ſage réflexion.

Un jeune homme de famille, âgé de vingt-neuf ans, aſſez bien conſtitué, d'un tempérament un peu humide & ſobre dans ſa maniere de vivre, après avoir obſervé rigoureuſement le jeûne du carême, ſe trouva tout d'un coup attaqué, ſans cauſe externe, de douleurs très violentes dans l'eſtomac & les inteſtins, accompagnées de vomiſſemens continuels de toutes ſortes de matieres; il ne pouvoit garder ni alimens ni bouillon, & ſouffroit une ſoif & une ardeur inexprimables. Il n'avoit point de fievre, mais un accablement, des anxiétés, des inquiétudes & des agitations dans tout le corps. Son ventre étoit reſſerré, & ne s'ouvroit qu'à force de lavemens, mais ſans ſoulager ſes douleurs. Tous les topiques dont on s'aviſa, ne calmerent aucunement ſon mal. La thériaque ſembla un peu modérer les vomiſſemens continuels de matieres abondantes. Il continua cependant à vomir encore de temps en temps l'eſpace de deux fois vingt quatre heures. Enſuite le vomiſſement s'arreta de lui-même, les douleurs ceſſerent, l'appétit revint, il but & mangea fort bien, le ſommeil étoit bon; en un mot, il ſe trouvoit beaucoup mieux. Il n'avoit pas eu un inſtant de fievre pendant tout le temps de ſes douleurs. La ſoif étoit le ſeul ſymptôme qui continuât à le tourmenter. Cet état de calme dura trois jours. Le quatrieme, ſans qu'il eût à ſe reprocher aucune faute dans le regime, ni dans aucune des choſes que les medecins appellent nonnaturelles, il ſe ſentit repris de maux d'eſtomac inſupportables quatre heures après avoir diné. Tout le bas-ventre devint tendu & douloureux, il ſe ſentoit ſuffoqué, le cœur lui manquoit, il étoit tourmenté par des envies de vomir, tout ſon corps étoit dans des agitations continuelles; il ne pouvoit ſe tenir ni couché ni debout. Cependant le ventre continuoit à enfler de plus en plus, le pouls devenoit petit & lent, quoique ſans fievre; Enfin, les extrémités froides, les anxiétés, les ſyncopes fréquentes, les ſueurs froides au front, l'anéantiſſement du pouls, tout annonçoit une mort prochaine, qui arriva ce jour-là même à ſix heures du ſoir.

Tout ſon corps enfla en un moment, & devint ſi monſtrueux qu'il n'avoit plus rien de la figure humaine. Les yeux, les oreilles, & ſurtout les levres n'étoient plus reconnoiſſables, tant elles étoient groſſes & livides. Le dos paroiſſoit tout gangrené, & les muſcles des lombes s'en alloient en bouillie pour peu qu'on les maniât. Toute la ſubſtance de l'eſtomac s'en alloit de même; il paroiſſoit rouge & manifeſtement corrodé en différens endroits, ſurtout dans une place où il étoit livide & tout pourri.

Bartholin & Borrichius' report (1676)

Case of Henriette-Anne. According to Hurst, an old diary of Sir John Finch (1626-1682) gives an account of the very strange death in 1670 of "Madame Henriette-Anne d'Angleterre," daughter of Charles I, with necropsy findings. Littré quotes an account of this autopsy. *A perforation was found in the middle and anterior part of the stomach,* and although the peritoneal cavity contained a large amount of fluid and gas, and although this fluid was described as being oily, "grasse comme l'huile," it was not recognized that the perforation had occurred during life. From the clinical description of the case there is no doubt that perforation of an ulcer occurred before death and that the oil in the contents of the peritoneal cavity was *the castor oil* which the patient had swallowed as a remedy.

In the New York City Public Library, the writer read the story by É. Littré: "Henriette D'Angleterre Belle-Sœur De Louis XIV, Est-Elle Morte Empoisonnée?" in *La Philosophie Positive Revue,* by É. Littré and G. Wyrouboff, Tome Premier (I), pp. 183-211, July-Dec., 1867, *Paris,* Librairie Germer Baillière.

Littré (1801-1881), in his *Médecine et Médecins* (1872), pointed out that Madame's symptoms were typical of *a perforated gastric ulcer* and that poison could not have caused them without producing a very acute gastritis which was not evident after death.

In the Bibliothéque Nationale, Paris, there is preserved the *Memoir of a Surgeon of the King of England, who was present at the opening of the body of "Madame."* This report stated: "The outside of the stomach looked healthy, and the inside was free from disease, except for a little hole in the middle of the anterior wall, which had been accidenal Ulcer and Its Surgical Treatment," [Lancet II: No. 4085, 1656-1663 (Dec. 14) 1901 and his Monograph on "Duodenal Ulcer," London, 1910]; the contributions of Sir Arthur F. Hurst (London); Knud Faber; Sippy; Rudolf Schindler (gastroscopy); Konjetzny; Francois Moutier (Paris); Haudek (1913, 1923); and the *numerous* valuable publications that have issued from the Mayo Clinic, the Lahey Clinic, the Hospital of the University of Pennsylvania (Philadelphia), Mount Sinai Hospital (New York), Guy's Hospital (London), Prof. Finsterer's Vienna Clinic, Max Thorek's Clinic (Chicago), and Professor Paolo Alessandrini's Clinic (Rome, Italy).

Contributions have also been made by Samuel and Soltau Fenwick (1893, 1900, 1902), Parry ("On Gastric Erosion," Guy's Hosp. Reports, 1868), Peter Ludwig Panum, ("Experimentelle Beitrage Zur Lehre von der Embolie," Virchow's Archiv., Vol. XXV, 1863-1864); Chvostek (1883); Oppenheimer (1891); Nothnagel (1904); Max Einhorn; Otto Hahn (1930, who reports two cases of perforated duodenal diverticulum, with recovery, and reviews the literature); and the recent publications by Bassler, F. K. Boland (July, 1939), La Due (1939), Finsterer (1939), Geisthövel (April 15, 1939), Kayne and Hounslow ("Examination of Gastric Contents for Tubercle Bacilli in Adults," June 10, 1939), Levin and Burton, et al. (July-August, 1939), Zadek (Freiburg, 1912), and Zemp ("Primary Jejunal Ulcer," July 1939).

ETIOLOGY AND DIAGNOSIS

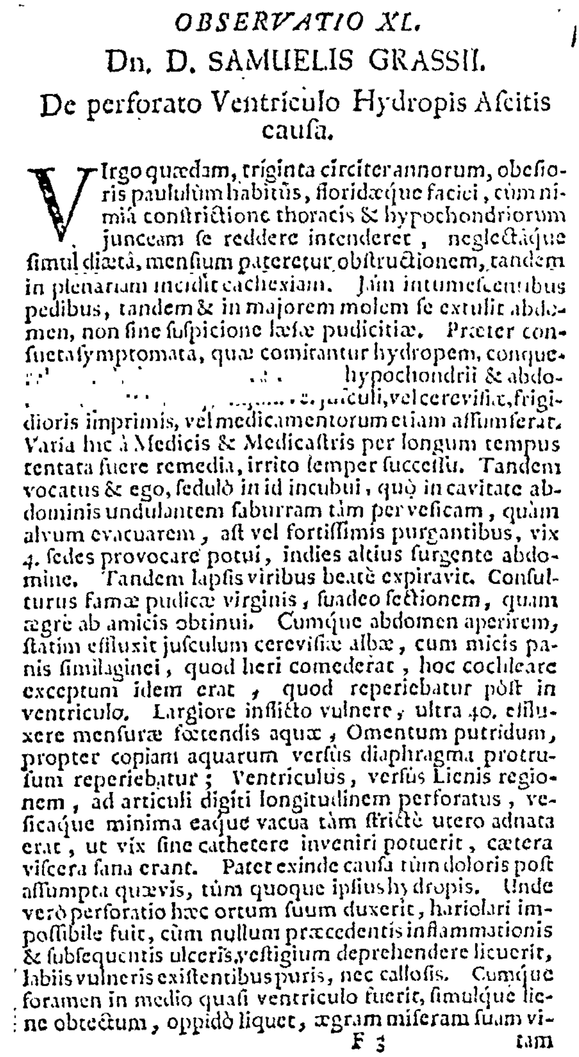
The relation of the nervous system to gastric ulcer was a problem many years ago as it still is today. Thus Schiff, Brown-Sequard, Ebstein, Ewald, Cushing, and others have performed a number of experiments which tend to show that injury to certain parts of the brain, separation of the penduncles of the brain, of the optic thalami, of the corpus striatum, of the crura cerebri, of the anterior corpora quadrigemina, and also of certain portions of the spinal cord, can lead to hemorrhage, bloody infiltration, and ulceration of the stomach walls. Under certain conditions *gastric hemorrhage* may originate from lesions of the central nervous system. The experiments of Frerichs produced an ulcer of the stomach in a cat after division of the splanchnic nerves and of the coeliac axis. Ebstein, by injuries to the brain and cord in animals, produced ulcers upon a hemorrhagic base. He and Schiff remarked that injuries of the nervous system, brain and cord were attended with gastric ulcers, while Klebs accounted for some gastric ulcers through *spastic* contraction of the arteries. In view of some recent studies of a similar nature (Cushing, 1932; Masten and Bunts, 1934; and Vonderahe, May 1939) the above comments are of historical interest.

Bucquoy (*1887*) was able to make a correct diagnosis of five ulcer cases from the *symptoms* alone. John Abercrombie and Jean Cruveilhier correctly recognized duodenal ulcer a century ago. Latour, of Orleans, in 1815 observed the occurrence of fatal hemorrhage from the stomach without any evident lesion (Histoire Philosophique et médicale des hémorragies) and mentioned cases reported by Portal, Franck, Hoffman, van Swieten, Baldinger, and Warton; and Goldstein brought to the attention of the profession the unusual form of gastrostaxis due to *telangiectatic bleeding* (Goldstein's "Heredofamilial Angiomatosis," 1937, 1938).

MISCELLANEOUS LESIONS

Healed gastric ulcers were noted by Forest, Schenk, Layard, de Haen, and Voigtel (Handbuch Der Path. Anat., Halle, II: p. 476, 1804), and others.

Ulcers in newborn infants were recorded by T. D. Lister, Spiegelberg, Goodhart, Siebold (1826), Th lander (Aug. 1939), J. (1838, "Peritonitis in F



OBSERVATIO XL.

Dn. D. SAMUELIS GRASSII.

De perforato Ventriculo Hydropis Aſcitis cauſa.

Virgo quædam, triginta circiter annorum, obeſioris paululùm habitûs, floridæque faciei, cùm nimiâ conſtrictione thoracis & hypochondriorum junceam ſe reddere intenderet, neglectâque ſimul diætâ, menſium pateretur obſtructionem, tandem in plenariam incidit cachexiam. Jàm intumeſcentibus pedibus, tandem & in majorem molem ſe extulit abdomen, non ſine ſuſpicione læſæ pudicitiæ. Præter conſueta ſymptomata, quæ comitantur hydropem, conque- [illegible] hypochondrii & abdo- [illegible] juſculi, vel cereviſiæ, frigidioris imprimis, vel medicamentorum etiam aſſumſerat. Varia hic à Medicis & Medicaſtris per longum tempus tentata fuere remedia, irrito ſemper ſucceſſu. Tandem vocatus & ego, ſedulò in id incubui, quò in cavitate abdominis undulantem ſaburram tàm per veſicam, quàm alvum evacuarem, aſt vel fortiſſimis purgantibus, vix 4. ſedes provocare potui, indies altius ſurgente abdomine. Tandem lapſis viribus beatè expiravit. Conſulturus famæ pudicæ virginis, ſuadeo ſectionem, quam ægrè ab amicis obtinui. Cumque abdomen aperirem, ſtatim effluxit juſculum cereviſiæ albæ, cum micis panis ſimilaginei, quod heri comederat, hoc cochleare exceptum idem erat, quod reperiebatur pòſt in ventriculo. Largiore inflicto vulnere, ultra 40. effluxere menſuræ fœtendis aquæ, Omentum putridum, propter copiam aquarum verſùs diaphragma protruſum reperiebatur; Ventriculus, verſùs Lienis regionem, ad articuli digiti longitudinem perforatus, veſicaque minima eaque vacua tàm ſtrictè utero adnata erat, ut vix ſine cathetere inveniri potuerit, cætera viſcera ſana erant. Patet exinde cauſa tùm doloris poſt aſſumpta quævis, tùm quoque ipſius hydropis. Unde verò perforatio hæc ortum ſuum duxerit, hariolari impoſſibile fuit, cùm nullum præcedentis inflammationis & ſubſequentis ulceris veſtigium deprehendere licuerit, labiis vulneris exiſtentibus puris, nec calloſis. Cumque foramen in medio quaſi ventriculo fuerit, ſimulque liene obtectum, oppidò liquet, ægram miſeram ſuam vi-

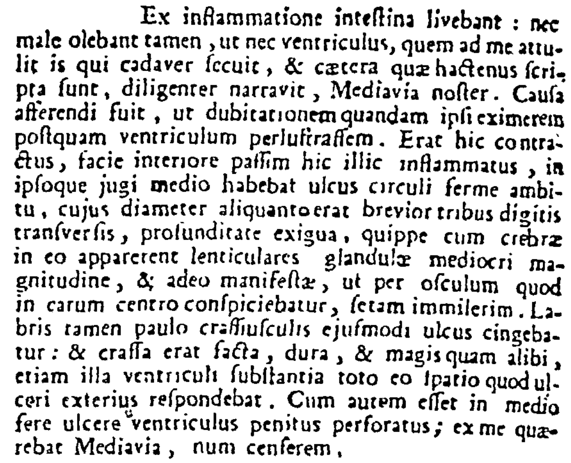
F 3 tam

Samuel Grassius (1695). *Miscellanea Curiosa sive Ephemerium German. Academiae C.-X. naturae Curios.* Decuriae III, Annus III, Annorum 1695 & 1696, Ed. 1696, Lipsiae, Fritschium Observatia XL, pp. 44-46.

tellement schirreux et bouché, que l'ouverture qui lui restoit n'estoit pas capable de recevoir une mediocre épingle. Le mal se répandoit jusqu'au Duodenum, au fond de l'estomac et a'l'omentum."

In passing, mention might also be made of *"De oxyregima"*, by J. C. Kletwich, Francofurti ad Oderam, 1689, in which are discussed normal and disordered gastric secretions.

Morgagni. Giovanni Battista Morgagni (1682-1771) believed that the gastric lesion (ulcer) was of the nature of gangrene of the stomach and agreed rather closely with Hippocrates (460-370 B. C.) as to the peculiar nature of the *"atra bilis."* Hippocrates described the character of the vomitus and stools and named the condition *"morbus niger."* He recommended dietary treatment for ulcer of the stomach, although he had no definite idea of this particular lesion.



Ex inflammatione inteſtina livebant : nec male olebant tamen, ut nec ventriculus, quem ad me attulit is qui cadaver ſecuit, & cætera quæ hactenus ſcripta ſunt, diligenter narravit, Mediavia noſter. Cauſa afferendi fuit, ut dubitationem quandam ipſi eximerem poſtquam ventriculum perluſtraſſem. Erat hic contractus, facie interiore paſſim hic illic inflammatus, in ipſoque jugi medio habebat ulcus circuli ferme ambitu, cujus diameter aliquanto erat brevior tribus digitis tranſverſis, profunditate exigua, quippe cum crebræ in eo apparerent lenticulares glandulæ mediocri magnitudine, & adeo manifeſtæ, ut per oſculum quod in earum centro conſpiciebatur, ſetam immiſerim. Labris tamen paulo craſſiuſculis ejuſmodi ulcus cingebatur: & craſſa erat facta, dura, & magis quam alibi, etiam illa ventriculi ſubſtantia toto eo ſpatio quod ulceri exterius reſpondebat. Cum autem eſſet in medio fere ulcere ventriculus penitus perforatus; ex me quærebat Mediavia, num cenſerem,

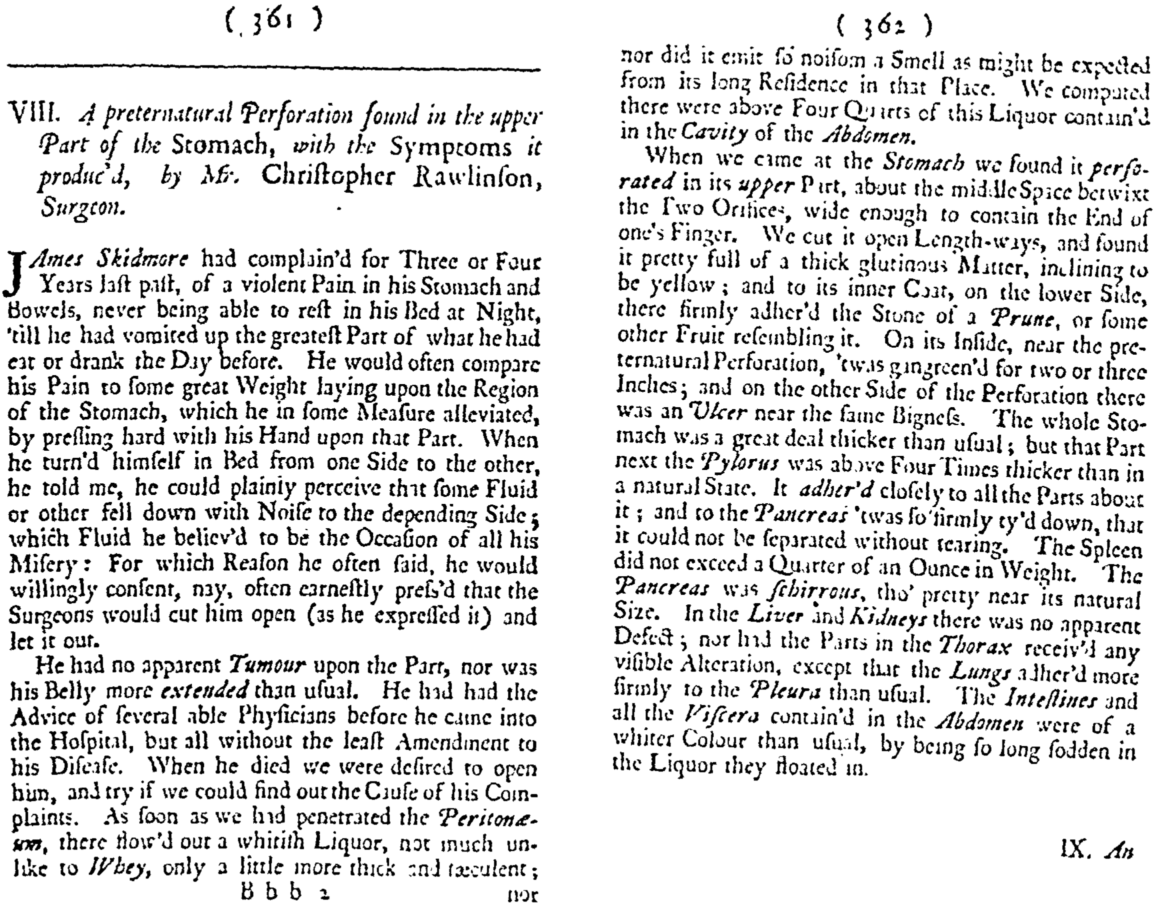
Giovanni Batista Morgagni, *De Sedibus*, 1761.

Morgagni in 1737 found an ulcer in the duodenum as well as several in the stomach of a woman who died 24 hours after the onset of severe abdominal pain. There is no definite evidence that the ulcers had perforated.

Every surgeon and gastroenterologist should be interested in the case reports in Morgagni's "De Sedibus" ["De Morbis Ventris," Liber III, Tomus Secundus, Letter XXIX, Articles 14-22, pp. 16-19 of the Latin Edition, Venice, 1761; and pages 33-42, Vol. II of the English Edition, London, 1769, "Of the Seats and Causes of Diseases Investigated By Anatomy"]. In Article 14, page 16, Liber III, 1761, Morgagni reports the case of an old woman who died from a *perforated gastric ulcer* the middle of October, 1735.

Of interest, too, is Morgagni's reference to Tyson's case *in an American with gastric perforation* (Book III,

space between the two orifices, wide enough to contain the end of one's finger . . . That part of the stomach next the pylorus was above four times thicker than in a natural state. . . . It was firmly tied down to the pancreas.



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VIII. *A preternatural Perforation found in the upper Part of the* Stomach, *with the* Symptoms *it produc'd, by Mr.* Chriſtopher Rawlinſon, *Surgeon.*

James Skidmore had complain'd for Three or Four Years laſt paſt, of a violent Pain in his Stomach and Bowels, never being able to reſt in his Bed at Night, 'till he had vomited up the greateſt Part of what he had eat or drank the Day before. He would often compare his Pain to ſome great Weight laying upon the Region of the Stomach, which he in ſome Meaſure alleviated, by preſſing hard with his Hand upon that Part. When he turn'd himſelf in Bed from one Side to the other, he told me, he could plainly perceive that ſome Fluid or other fell down with Noiſe to the depending Side; which Fluid he believ'd to be the Occaſion of all his Miſery: For which Reaſon he often ſaid, he would willingly conſent, nay, often earneſtly preſs'd that the Surgeons would cut him open (as he expreſſed it) and let it out.

He had no apparent *Tumour* upon the Part, nor was his Belly more *extended* than uſual. He had had the Advice of ſeveral able Phyſicians before he came into the Hoſpital, but all without the leaſt Amendment to his Diſeaſe. When he died we were deſired to open him, and try if we could find out the Cauſe of his Complaints. As ſoon as we had penetrated the *Peritonæum*, there flow'd out a whitiſh Liquor, not much unlike to *Whey*, only a little more thick and fæculent;

B b b 2 nor

(362)

nor did it emit ſo noiſom a Smell as might be expected from its long Reſidence in that Place. We computed there were above Four Quarts of this Liquor contain'd in the *Cavity* of the *Abdomen.*

When we came at the *Stomach* we found it *perforated* in its *upper* Part, about the middle Space betwixt the Two Orifices, wide enough to contain the End of one's Finger. We cut it open Length-ways, and found it pretty full of a thick glutinous Matter, inclining to be yellow; and to its inner Coat, on the lower Side, there firmly adher'd the Stone of a *Prune*, or ſome other Fruit reſembling it. On its Inſide, near the preternatural Perforation, 'twas gangreen'd for two or three Inches; and on the other Side of the Perforation there was an *Ulcer* near the ſame Bigneſs. The whole Stomach was a great deal thicker than uſual; but that Part next the *Pylorus* was above Four Times thicker than in a natural State. It *adher'd* cloſely to all the Parts about it; and to the *Pancreas* 'twas ſo firmly ty'd down, that it could not be ſeparated without tearing. The Spleen did not exceed a Quarter of an Ounce in Weight. The *Pancreas* was *ſchirrous*, tho' pretty near its natural Size. In the *Liver* and *Kidneys* there was no apparent Defect; nor had the Parts in the *Thorax* receiv'd any viſible Alteration, except that the *Lungs* adher'd more firmly to the *Pleura* than uſual. The *Inteſtines* and all the *Viſcera* contain'd in the *Abdomen* were of a whiter Colour than uſual, by being ſo long ſodden in the Liquor they floated in.

IX. *An*

Christopher Rawlinson's case (1727).

Interesting comments are found under the title of "Ventriculus," pp. 1313-1318, 1739 (Noribergæ), XXVII, in "Synopsis observationum medicarum et physicarum Ephemeridum Acad. naturae curiosorum."

Malloch (1919) erroneously states that the term "Ulcus ventriculi" was first employed by Johann Peter Frank (1745-1821); he advised a milk diet, absolute rest "summa quies corporis imperanda," the internal use of serum lactis albuminatum as a styptic; and application of snow to the surface of the abdomen.

The celebrated Plancus, in his *Epistola, De Monstris ac Monstrosis* (Jani Planci, Venetiis, 1749), reports a case of *pyloric ulcer* and speaks of "Conspectus Segmenti Ventriculi, in cuius fundu versus Pylorum Ulcus callosum, et profundum conspiciebatur" (Tab. II, Fig. I, page 30); and "Ulcus hoc callosum Ventriculo hic memoro, quod hoc morbi genus saepenumero a me observatum sit Armini," etc. (page 16, lines 20-21; page 17, lines 5-16).

Other reports of this period of interest are those by J. H. Furstenau, ["Foramen in fundo ventriculi," *Acta*

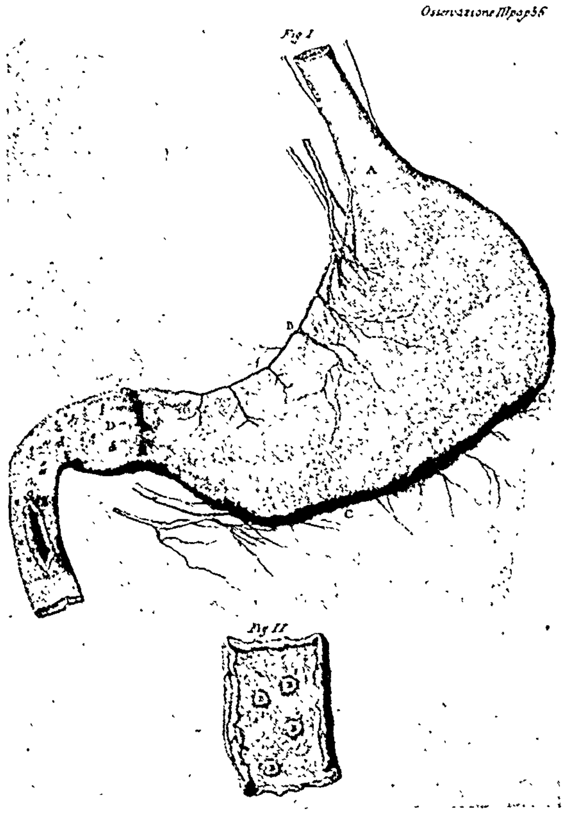

Illustration from one of the earliest reports of perforation of the duodenum. Case of Domenico Miazzo reported by Jacopo Penada (1748-1828), Padova, 1793.

pages 33-56, concerns this interesting case.

Archibald Malloch (of The New York Academy of Medicine) published (1919) "An Early Record of Perforating Duodenal Ulcer," which was the case report of Jacopo Penada's patient, Domenico Miazzo, of Padova, who died June 23, 1791.

Matthew Baillie (1761-1823), physician to St. George's Hospital, gave an early clear description of the morbid anatomy and symptoms of *gastric ulcer* in 1793, in his "Morbid Anatomy of Some of the Most Important Parts of the Human Body." He wrote, "Opportunities occasionally offer themselves of observing ulcers of the stomach." He is credited with the first accurate anatomical description of stomach ulcer, in 1793, including the description of the shelving floor of the lesion, and he published accurate and clear plates.

Credit should also be given to Cruveillhier (1791-1874) for his early description of *"ulcus simplex chronicum"* in his "Anatomie Pathologique." His treatment of the condition was, "Le repos c'est la diet."

However, gastric ulcer is frequently called *"ulcer of Cruveilhier"* in French literature, where it is also stated that Cruveilhier's investigations (1829-1835) established the anatomical characteristics and complications and the principal clinical features of gastric ulcer. He is thought by French writers to be the first definitely to distinguish chronic ulcer from cancer and to suggest a method of treatment. I believe that Abercrombie already recognized all this in addition to his description of duodenal ulcer, which Cruveilhier had failed to mention as late as 1856. Cruveilhier described, however, a case of perforation of a chronic ulcer of the duodenum and illustrated it with a drawing in his *Anatomie Pathologique*.

John Abercrombie (1780-1844), of Edinburgh, gave an excellent description of the symptoms of *gastric ulcer* in his *Pathological and Practical Researches on Diseases of the Stomach, the Intestinal Canal, the Liver, and Other Viscera of the Abdomen* (1828). He described the symptoms which occurred when an ulcer bled or perforated, and recommended special treatment. He recognized that cancer of the stomach was a distinct disease. He reported a case October 1, 1835, entitled, "Duodenal Perforation in a Lady Aged 30 Years."

Benjamin Travers, in 1816, described a number of cases of perforated gastric and duodenal ulcer under his care.

Perforated ulcers of the stomach were recorded by R. G. Gastellier (1815), C. G. Schmalz (1820-1822), L. F. Gasté (1822), J. B. Beck (1823), F. Praël (1825), G. Giaconi (1829), L. Rawlson (1830), Girard (1831), Ricord (1831), J. Sym (1835), Rokitansky (1840), Ward (1841), Phinney (1841), Graves

INDIVIDUALIZATION OF THE TREATMENT OF FRACTURE OF THE NECK OF THE FEMUR IN THE AGED

PROF. DR. HERMAN DE LAS CASAS, F.I.C.S.

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CARACAS, VENEZUELA

FRACTURES of the neck of the femur were, for years, dreaded at our department. We had many unfavorable end results. In the last few years, however, our final results have been so much more satisfactory that, even though we may not have solved the problem, at least we believe that we are on the right path.

This paper will be but a brief summary of our experiences during the last few years. It is being presented as a preliminary résumé of a more detailed report which will appear later.

REASON FOR INDIVIDUAL TREATMENT

Our previous failures have guided us to our present conclusions. Many times, very similar cases produced entirely dissimilar end results. Sometimes what appeared to be an excellent result early, was found to be a failure when the patient returned a few months later with a flattened femoral head and a painful hip.

At last we understood. Our whole problem was one of the *blood supply to the capital fragment.* Whenever well immobilized, aligned and impacted fragments failed to unite, roentgenological signs of necrosis of the femoral head were found.

We decided, therefore, to do an open operation in every case so that we might inspect directly the blood supply of the fragments. The useless necrotic heads were removed and studied; our findings from these studies will be published in a later, more complete report.

The following facts presented themselves to us: (1) *In some fractures, all the important vessels supplying the femoral head were destroyed;* (2) *in other cases, enough vessels to nourish the head were spared.*

In group one the head develops an ischemic necrosis, therefore no union can be expected. In group two, however, the head survives and union is possible.

This difference explains the need for individualization of treatment, depending upon the condition of the capital fragment. If the head can survive, union and an anatomical result should be sought. If, however, the head is necrotic, then it cannot unite, and only a functional result should be expected.

There are still other reasons for individualizing the treatment. While some patients are strong enough to stand a serious operation, others are too frail to be exposed to such danger. Also the local conditions are different in fresh and old fractures, and this factor requires special consideration. Still other reasons, too numerous and too well known to all of you, may cause the surgeon to vary the treatment. To review all of them would carry us too far afield. We wish to report only a broad outline of what we believe to be the most important facts.

RECENT FRACTURES

In youth, the ligamentum teres is a blood vessel carrier, but in aged people, it suffers sclerosis so that the amount of blood passing through it is negligible and quite incapable of fulfil [illegible] r [illegible] of the femoral head. In t

19: 379-386, 1804) the patient being a man, 55 years of age; and a report under the title, "Observation sur une perforation du duodénum," J. Univ. d. sc. méd. de Paris, 51: 255, 1828.

The fatal case reported by Ash (1843) was that of a patient 50 years old of strongly marked bilious temperament who was suddenly seized (June 15, 1843) with epigastric pain of the most intense severity. The necropsy was performed by William E. Haines, who found a perforation of a duodenal ulcer, circular, as though made by a shoemaker's punch, as large as a medium sized goose quill, about one and one-half inches below the pylorous.

Bailey's patient was a young woman, aged 28 years. The duodenum in its transverse portion was found to have a circular opening in it, surrounded by a black margin externally; internally, the perforation seemed larger, its side sloping off; there was evidence of previous inflammation around the ulceration. The sudden and fatal attack occurred immediately after the wedding, and the marriage was not consummated.

During the latter part of the nineteenth century several articles of importance made their appearance in medical literature, which should be mentioned in this historical review. Particularly deserving citation are the publications of J. Uffelmann ["Ueber die Methode der Untersuchung des Mageninhalts auf freie Saüren; Versuche an einem Gastrotomirten,"—*Deutsches Arch. f. klin. Med.*, Leipzig 26: 431-454, 1880]; G. Sticker ["Hypersecretion und Hyperacidität des Magensaftes," *München. Med. Wochens.* 33: 561-580, 1886]; W. A. Gluzinski and W. Jaworski ["On Disorders of Gastric Juice and Excess of Acidity," *Przegl. lek.*, Krakow 25: 605; 622, 1886]; A. Günzburg ["Eine neue Methode zum Nachweis freier Salzsaüre im Mageninhalt," *Centralbl. f. klin. Med.*, Leipzig 8: 737-740, 1887]; J. C. Blonk ["Zur Hypersecretion von Salzsaüre, *Berlin. klin. Wochens.* 24: 789-791, 1887]; J. Boas ["Ein neues Reagens für den Nachweis freier Salzsaüre in Mageninhalt," *Centralbl. f. klin. Med.*, Leipzig 9: 817-820, 1888]; G. Budd ["On the Organic Diseases and Functional Disorders of the Stomach," London, 1855]; W. Brinton ["Ulcer of the Stomach," London, 1857; and "Diseases of the Stomach," London, 1858]; and Bucquoy (*Arch. gèn. de Méd.* 1: 398-434, 526-553, 691-716, 1887, Paris).

C. A. M. Broussais discussed "Chronic Duodenitis" (Sur la Duodénite Chronique, Paris, 1823). The studies of Wilhelm Müller (1868, Jena) of postmortem examinations and the observations of T. B. Curling (1842), Swan (1823), Macfarlane (1833), Dupuytren (1832), Cooper (1839), Long (1840), Perry and Shaw (1893), Harkins (1938), Keeley (1939), Penner (1939) and others on duodenal ulceration following burns are interesting.

TWENTIETH CENTURY

One cannot leave this historical review without, at least, giving mention to those who have contributed so much to this branch of medicine during the early part of the twentieth century. Time and space will permit the writer only to cite such names as B. G. A. Moynihan, of Leeds ["On Duodenal Ulcer; with Notes of 52 Operations," Lancet I: No. 4250, 340-346, (Feb. 11), 1905, and numerous other publications]; W. Bruce Clarke, Surgeon of The St. Bartholomew's Hospital ["The Septic Origin of Gastric and Duodenal Ulcers," Lancet I: No. 4250, 346-347 (Feb. 11) 1905]; W. Hale White, of Guy's Hospital ["Are Not Some Patients Said to be Afflicted with Gastric Ulcer Really Suffering from a Different Disease?" Lancet I: No. 4061, 1819-1820 (June 29) 1901; and "Gastrostaxis, or Oozing of Blood from the Mucous Membrane of the Stomach," Lancet II: No. 4340, 1189-1195 (Nov. 3) 1906]; Moynihan's paper on "Duonecessary because of the osteotomy. It is for this reason, above all, that we do it only in strong patients.

Diagnosis of the Variety of Fracture. In most cases, the position of the line of fracture is sufficient to determine whether one is dealing with a medial type in which the head is necrotic or a lateral type in which the head will survive.

When the line passes a few millimeters lateral to the head, in the zone in which the last vessels enter the neck, it is more difficult to decide.

Fortunately, the necrosis of the head can be detected on the roentgenogram after some days. In the case of a fresh fracture, the upper extremity of the femur, because of the lack of weight bearing, suffers a certain degree of decalcification, visible in a good film. If the capital fragment is isolated from the rest, because its vascular connections are cut, it will not participate in the process of decalcification. That makes the head seem more dense than the lateral fragment.

Also, if still in doubt, one can operate through an arthrotomy and directly examine the vascularization of the fragments before deciding on the operation to be performed.

If the patient is too frail, or if there is any other reason not to perform the arthrotomy, one can do the fixation as if it were a lateral fracture. In case of failure, it is still possible to remove the head.

OLD FRACTURES

In old fractures, the local conditions are different enough to require another line of conduct. An old fracture can need treatment because of (1) nonunion or (2) malunion.

1. *Nonunion.* The first step is to see whether the head is dead, that is to say, whether it was a lateral or a medial fracture. Sometimes it is impossible to judge from the length of the fragments because of resorption, but at this time it is always possible to judge according to the density.

In *lateral fractures*, just as in fresh fractures, if the head is living, union can be expected. However, unlike the fresh fractures, the two fragments are healed and are separated from each other. To promote union, it is necessary to freshen the fragments. This requires an operation through an arthrotomy which can be performed under local anesthesia. Arthrotomy was not necessary for union of fresh fractures.

In *medial fractures* the head is dead and must be removed. However, in old fractures the neck has suffered resorption and is very much shortened. It cannot support the acetabulum. The upper extremity of the trochanter could be placed under the rim of the acetabulum, to bear the weight, but in the movements of adduction luxation would occur. We freshen the surfaces of both the trochanter and the acetabulum. A fibrous union, or even a bony union, develops between them. The patient will have a stiff hip, but good function will result. Every surgeon has seen such cases of stiff hip joint, caused by arthritis, with good function.

2. *Malunion.* The condition is a "coxa vara traumatica." As the *medial variety of fracture* is not capable of union (good or bad) because of the dead head, only the *lateral fracture* is to be considered.

The difficulty comes in this case, as in any other coxa vara, from the lack of distance between the insertions of the pelvitrochanteric muscles and their origins. By means of a subtrochanteric osteotomy, the proper distance between the insertions and their origins can be reestablished.

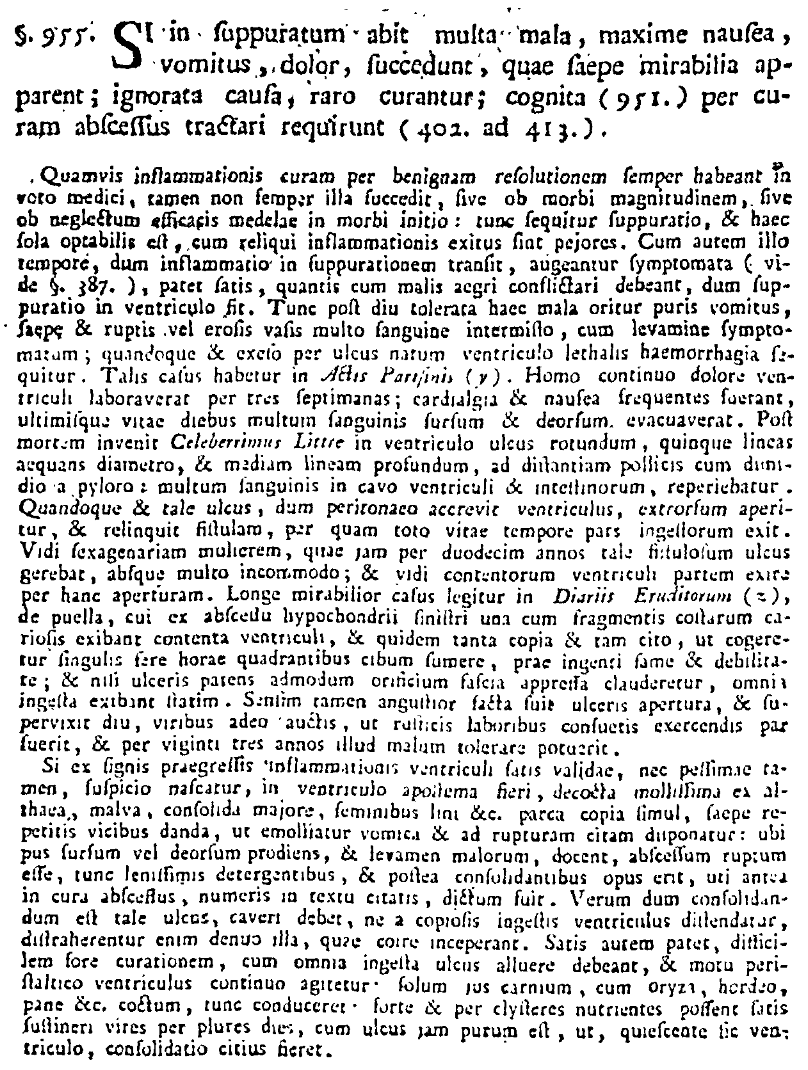
RECAPITULATION

The methods of treatment may be summarized as follows:

1. *Fresh Fractures:*
   - A. Lateral: head living: union possible *internal fixation*
     - a. Weak Patient: metallic nailing
     - b. Strong Patient: autogenous pegging

others. H. Adler (1907) deals with gastric ulcers in childhood, and J. Cathala (1938) reports on chronic duodenal ulcer in an infant.

The development of cancer on ulcer was recognized as occurring not infrequently by A. F. Holtzhausen (1832), Peacock (1848), Platow (1877), Dieulafoy (1897), Scott and Mider (April, 1938), Hauser (1883), Koch (1893), Letulle (1897), Fenwick (1902), Rokitansky and Dittrich, Lebert, Zenker, Rosenheim, Eichhorst, Ewald, Fritz Stromeyer (Freiburg, 1912), Eustermann, and others. Barling (1901), Hirschfeld (1902), and others did not share this view.



§. 955. SI in ſuppuratum abit multa mala, maxime nauſea, vomitus, dolor, ſuccedunt, quae ſaepe mirabilia apparent; ignorata cauſa, raro curantur; cognita (951.) per curam abſceſſus tractari requirunt (402. ad 413.).

Quamvis inflammationis curam per benignam reſolutionem ſemper habeant in voto medici, tamen non ſemper illa ſuccedit, ſive ob morbi magnitudinem, ſive ob neglectum efficacis medelae in morbi initio: tunc ſequitur ſuppuratio, & haec ſola optabilis eſt, cum reliqui inflammationis exitus ſint pejores. Cum autem illo tempore, dum inflammatio in ſuppurationem tranſit, augeantur ſymptomata (vide §. 387.), patet ſatis, quantis cum malis aegri conflictari debeant, dum ſuppuratio in ventriculo fit. Tunc poſt diu tolerata haec mala oritur puris vomitus, ſaepe & ruptis vel eroſis vaſis multo ſanguine intermiſto, cum levamine ſymptomatum; quandoque & exeſo per ulcus natum ventriculo lethalis haemorrhagia ſequitur. Talis caſus habetur in *Actis Pariſinis* (y). Homo continuo dolore ventriculi laboraverat per tres ſeptimanas; cardialgia & nauſea frequentes fuerant, ultimiſque vitae diebus multum ſanguinis ſurſum & deorſum evacuaverat. Poſt mortem invenit *Celeberrimus Littre* in ventriculo ulcus rotundum, quinque lineas aequans diametro, & mediam lineam profundum, ad diſtantiam pollicis cum dimidio a pyloro: multum ſanguinis in cavo ventriculi & inteſtinorum, reperiebatur. *Quandoque & tale ulcus, dum peritonaeo accrevit ventriculus, extrorſum aperitur*, & relinquit fiſtulam, per quam toto vitae tempore pars ingeſtorum exit. Vidi ſexagenariam mulierem, quae jam per duodecim annos tale fiſtuloſum ulcus gerebat, abſque multo incommodo; & vidi contentorum ventriculi partem exire per hanc aperturam. Longe mirabilior caſus legitur in *Diariis Eruditorum* (z), de puella, cui ex abſceſſu hypochondrii ſiniſtri una cum fragmentis coſtarum carioſis exibant contenta ventriculi, & quidem tanta copia & tam cito, ut cogeretur ſingulis fere horae quadrantibus cibum ſumere, prae ingenti fame & debilitate; & niſi ulceris patens admodum orificium faſcia appreſſa clauderetur, omnia ingeſta exibant ſtatim. Senſim tamen anguſtior facta fuit ulceris apertura, & ſupervixit diu, viribus adeo auctis, ut ruſticis laboribus conſuetis exercendis par fuerit, & per viginti tres annos illud malum tolerare potuerit.

Si ex ſignis praegreſſis inflammationis ventriculi ſatis validae, nec peſſimae tamen, ſuſpicio naſcatur, in ventriculo *apoſtema fieri*, *decocta molliſſima* ex althaea, malva, conſolida majore, ſeminibus lini &c. parca copia ſimul, ſaepe repetitis vicibus danda, ut emolliatur vomica & ad rupturam citam diſponatur: ubi pus ſurſum vel deorſum prodiens, & levamen malorum, docent, abſceſſum ruptum eſſe, tunc leniſſimis detergentibus, & poſtea conſolidantibus opus erit, uti antea in cura abſceſſus, numeris in textu citatis, dictum fuit. Verum dum conſolidandum eſt tale ulcus, caveri debet, ne a copioſis ingeſtis ventriculus diſtendatur, diſtraherentur enim denuo illa, quae coire inceperant. Satis autem patet, difficilem fore curationem, cum omnia ingeſta ulcus alluere debeant, & motu periſtaltico ventriculus continuo agitetur: ſolum jus carnium, cum oryza, hordeo, pane &c. coctum, tunc conduceret: forte & per clyſteres nutrientes poſſent ſatis ſuſtineri vires per plures dies, cum ulcus jam purum eſt, ut, quieſcente ſic ventriculo, conſolidatio citius fieret.

"Ventriculi Inflammatio" in *Commentaria in Hermanni Boerhaave Aphorismos*, Neapoli, 1766, Tomus V: Section 955: pp. 132-133, by Baron Gerard van Sweiten (1700-1772).

Gastric fistula. While it is true that Corvisart and Leroux (1802), and Beaumont were the first carefully to study digestion and movements of the stomach *in situ* (1825, 1826, 1833), many writers have previously reported interesting cases of *gastric fistula*: M. C. Cornax (born circa 1520), Johannes Schenckius à Grafenberg (1530-1598) related two cases (1609), Petri Borell (1656); Christianus Mentzelius (1686),

ARTHROPLASTY OF THE TIBIOTARSAL ARTICULATION

AUTHOR'S METHOD

DR. ABELARDO IBAÑEZ BENAVENTE

LA PAZ, BOLIVIA

TIBIOTARSAL ankylosis is a joint affection which is particularly distressing to the patient and especially so when such fixation has left the foot in an extended or equine position. This position, when exaggerated, is called "dancer's foot" because of its similarity to that assumed by a toe dancer. The awkwardness and disability resulting from such an ankylosis is extreme, for in order to rest the sole of the foot partially or completely on the ground the patient has to maintain the affected limb permanently in flexion, the thigh on the trunk and the leg on the thigh.

CAUSE OF DEFORMITY

Unfortunately this type of ankylosis, *when following an arthritic affection of* the tibiotarsal joint, is often due to failure on the part of the surgeon to immobilize the joint at right angles, the optimum position should ankylosis result. For this reason right angle immobilization should be carried out in the presence of any arthritic process of this joint, regardless of the etiology of the affection. In many patients wounded in the Chaco War unfortunate results followed improper immobilization.

The patient bears deformity by ankylosis with the foot at right angles more easily than with the foot in another position because of compensatory movements in the other joints of the foot, such as the intertarsal, metatarsal and [illegible] In any case it is [illegible] and produces a

METHODS OF CORRECTION

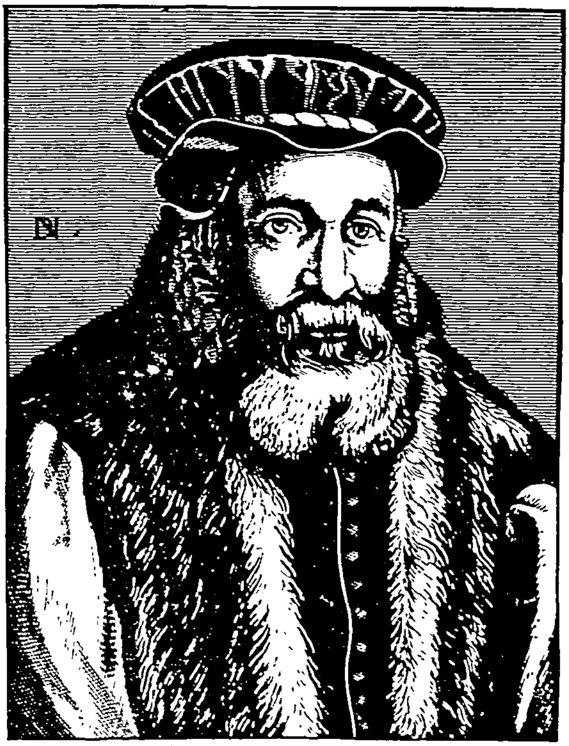
Many surgical procedures have been devised to lessen the deformity and overcome the disability resulting from this type of ankylosis. Ollier practiced both astragalectomy and reparatory resection. Hexer performed an arthroplasty requiring the section of the anterior tibial ligament and the extensor proprius. Reich, Hoffman and Schepeliami inverted the form of the articular surfaces.

AUTHOR'S METHOD

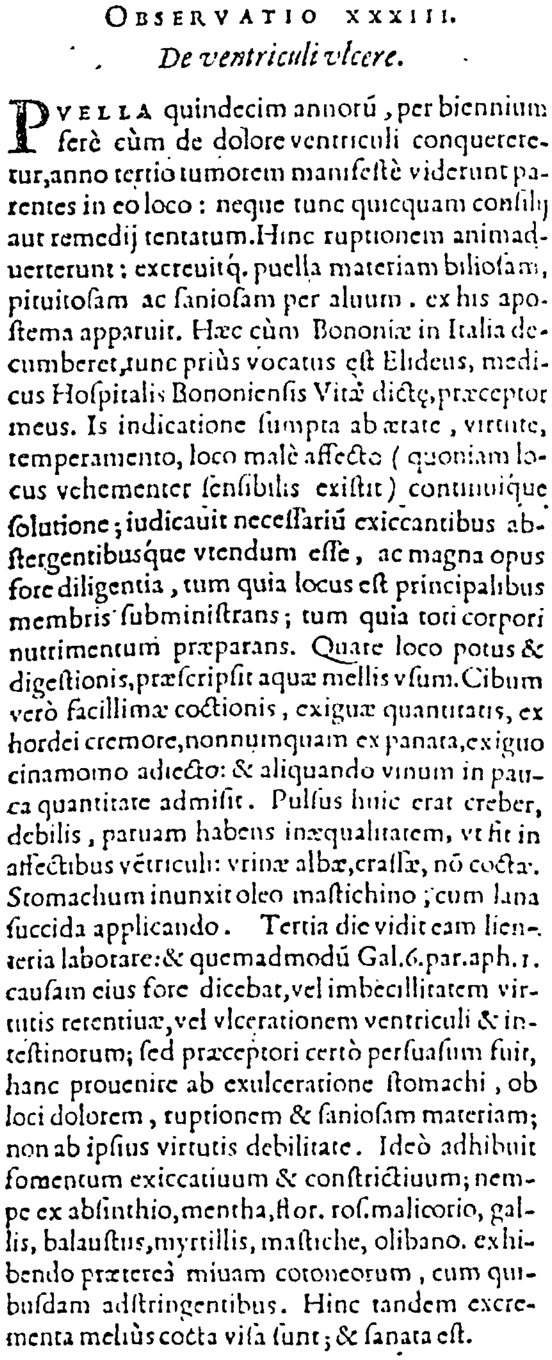
The operation which will be described now is an arthroplasty which was devised by the writer and was used in all cases of ankylosis of the tibiotarsal joint treated during the Chaco War in the Banco Central Hospital for Plastic Surgery. The operation is somewhat difficult to perform because of the relative inaccessability of the tibiotarsal articulation, but this has been made somewhat easier by selecting the lateral approach after temporary resection of the malleolus of the fibula. The functional results have been very satisfactory.

Incision. The foot to be operated upon is placed with its medial surface resting on a sandbag. A semicircular incision (Fig. 1) 10 cm. long is made through the skin and subcutaneous tissue with the external malleolus as the center. The tendons of the peroneus longus and brevis are separated from their sheaths and retracted (Fig. 2). At a point about 3 cm. from the apex of the malleolus of the fibula a Gigli saw is introduced between the tibia and fibula and the fibula then is sawn through, upwards and outwards, forming an oblique surface which will insure perfect bone coaptation when reunited after the operation. The

Effect of Neutral Fat, Fatty Acid, and Soaps; the Phase of Gastric Secretion Influenced and the Relative Importance of the Psychic and Chemical Phases," *Ann. Int. Med.* 13: No. 2, 294-307 (Aug.) 1939]. In connection with the latter paper, mention should be made of the publications by D. M. Cowie [*Physician and Surgeon, Detroit and Ann Arbor,* 25: 241-252, 1903), Cowie and J. F. Munson, *Arch. Int. Med.* I: No. 1, 61-101, (Jan.) 1908]; Rhazes (850-923); and the *Isagoge* of Joannitius (809-873), an ancient text-book of medicine. Rhazes, the "Galen of the Arabs," provided an excellent maxim: "When you can heal by diet, prescribe no other remedy." In the *Isagoge*, in the discussion on foods, it is stated: "and of these the flesh of the middle sized animal (pork, beef, chicken, etc.) and more active kinds is better than that of the *fatter* and scaly varieties. Heavy foods produce phlegm and black bile, and either of these is evil."


PETRVS FORESTVS, MED.

Above, Petrus Alcmarianus Forestus (1522-1597). Right, "De Ventriculi ulcere," Lib. XVIII, Obs. XXXIII, pp. 170-175, in *Observait. et Curationum Medicinalium,* Lugduni Batav., Plantiniana, 1594. Petrus Forestus, Ed.


OBSERVATIO XXXIII.

De ventriculi vlcere.

PVELLA quindecim annorú, per biennium ferè cùm de dolore ventriculi conquereretur, anno tertio tumorem manifeſtè viderunt parentes in eo loco: neque tunc quicquam conſilij aut remedij tentatum. Hinc ruptionem animaduerterunt: excreuitq́. puella materiam bilioſam, pituitoſam ac ſanioſam per aluum. ex his apoſtema apparuit. Hæc cùm Bononiæ in Italia decumberet, tunc priùs vocatus eſt Elideus, medicus Hoſpitalis Bononienſis Vitæ dictę, præceptor meus. Is indicatione ſumpta ab ætate, virtute, temperamento, loco malè affecto (quoniam locus vehementer ſenſibilis exiſtit) continuique ſolutione; iudicauit neceſſariú exiccantibus abſtergentibusq́ue vtendum eſſe, ac magna opus fore diligentia, tum quia locus eſt principalibus membris ſubminiſtrans; tum quia toti corpori nutrimentum præparans. Quare loco potus & digeſtionis, præſcripſit aquæ mellis vſum. Cibum verò facillimæ coctionis, exiguæ quantitatis, ex hordei cremore, nonnumquam ex panata, exiguo cinamomo adiecto: & aliquando vinum in pauca quantitate admiſit. Pulſus huic erat creber, debilis, paruam habens inæqualitatem, vt fit in affectibus vẽtriculi: vrinæ albæ, craſſæ, nõ coctæ. Stomachum inunxit oleo maſtichino; cum lana ſuccida applicando. Tertia die vidit eam lienteria laborare: & quemadmodú Gal. 6. par. aph. 1. cauſam eius fore dicebat, vel imbècillitatem virtutis retentiuæ, vel vlcerationem ventriculi & inteſtinorum; ſed præceptori certò perſuaſum fuit, hanc prouenire ab exulceratione ſtomachi, ob loci dolorem, ruptionem & ſanioſam materiam; non ab ipſius virtutis debilitate. Ideò adhibuit fomentum exiccatiuum & conſtrictiuum; nempe ex abſinthio, mentha, flor. roſ. malicorio, gallis, balauſtus, myrtillis, maſtiche, olibano. exhibendo prætereà miuam cotoneorum, cum quibuſdam adſtringentibus. Hinc tandem excrementa meliùs cocta viſa ſunt; & ſanata eſt.

Inflammatione ventriculus (gastritis) was discussed by Forestus (1595), Fr. Hoffmann (1706), Van Swieten, Colin (1771), Haymann (1779), Bode malleolus is dissected downward, care being taken not to separate it from the external lateral ligament, which by its insertion at its tip serves as a hinge to aid its downward rotation. The cut malleolus should be covered with a wet sponge while the operator proceeds to expose the entire external lateral surface of the tibio-astragalar synosteosis. The periosteum covering this synosteosis, after having been cut in the direction of an imaginary line between the two bones, is separated for a moderate distance. All the tissues and tendons on the anterior surface of the articulation are separated subperiosteally with the aid of wide retractors until a complete exposure of the anterior surface of the tibio-astragalar articulation is obtained.

Separation of Bones. A Putti chisel of the proper curvature is used to separate the bones (Fig. 3). Beginning at the anterior surface of the articulation this separation should follow as closely as possible the normal form of the astragalus and the articular surface of the tibia. While using the chisel to open the synosteosis, slight downward traction should be applied to the foot with countertraction on the leg. After the bones are separated completely (Fig. 4) their bony surfaces are exposed, the inferior surface being convex, the superior one concave, with the axes of both directed anteroposteriorly. These articular surfaces now should be made very smooth and even. This is best done with special files. When the operator is working on the tibial surface the lower end of the tibia should be pushed downward and forward by means of a lever placed behind it. The procedure is completed when the convex surface of the tibia fits evenly against the concave surface of the astragalus, imitating a normal articulation and allowing free gliding between both surfaces. The surfaces are then dried and the field cleaned of any loose shreds of connective tissue (Fig. 5).

Interposition of Flap. For the interposing flap a piece of fascia lata of the required size is removed from the patient. Because of the depth to which this flap must be inserted, this procedure requires a somewhat special technic. The piece of fascia lata is first folded on itself and then the folded side is inserted between the articular surfaces by means of two Kocher forceps which hold them in place until they have become fixed in position by sutures (Figs. 6 and 7). These sutures are of heavy chromic catgut introduced by long straight needles. The first one is passed between the layers of the flap, through its folded edge and through the soft tissues of the median side of the instep, where it emerges. The other end of this suture is passed in a similar manner so that when the two ends are tied together they form a mattress suture which anchors the folded part of the flap securely in place. Two more sutures suffice to anchor the folded end of the flap. In those cases in which the articular surfaces are especially deep the sutures may be introduced from without inward rather than from within outward.

When the folded edge of the flap has been anchored, the two free layers are ready to be sutured at their circumference to the joints which they overlie. Interrupted sutures of catgut fasten them to the fibrous tissue which was purposely dissected free in the early stage of the operation. In suturing the flap over the tibular end, a small portion should be left at the point of attachment for the fibula; this portion, after suture of the cut ends of the flap, is fixed to the tibia by means of Parham-Putti tape. (See Figs. 8-11.) The joint then is reconstructed.

Before closing the fibrous tissue and skin a horse hair drain is inserted into the wound to drain any secretions through the lateral side of the foot. The foot is then bandaged so that it is maintained in a right angle position. (See Figs. 12-15.)

POSTOPERATIVE CARE

Dressings are changed on the first postoperative day, the drain is removed on the second or third, and passive motion of the foot is begun on the seventh. On the fifteenth massage is commenced and physiotherapy is instituted, while on the twentieth postoperative day gradual weight bearing is allowed. Within the next few days the patient is able to walk with aid of crutches or canes.

SUMMARY

The author describes, step by step, his method for arthroplasty which he uses in cases of ankylosis of the tibiotarsal joint. He has simplified this operation by selecting the lateral approach after temporary resection of the malleolus of the fibula. Functional results have been very satisfactory.

ZUSAMMENFASSUNG

Die Anwendung von Magnesium trisilicat Kolloidalem Kaolin und Aluminium hydroxyd in saüre bindender Magenbehandlung. Die Geschichte und Arten der Behandlung des Magen- und Zwölffingerdarmgeschwürs

Die Methode des Autors der Behandlung des Magen- und Zwölffingerdarmgeschwürs vermittelst unsystematischer saürebindender Therapie (Magnesium trisilicat, Kolloidalem Kaolin und Aluminium hydroxyd) mit Ergebnissen in mehreren hundert Fällen, wird beschrieben. Eine erschöpfende bibliographische Studie des Magen- und Zwölffingerdarmgeschwürs mit Berichten über Fälle von Galen bis zu Autoren der letzten Jahre ist ausgeführt.

SUMARIO

El uso de Trisilicato de Magnesio, Kaolín Coloidal, y Hidroxido de Aluminio en la Terapeutica Gastrica Antiácida. La Historia y Forma de Tratamiento de Ulcera del Estómago y Duodeno

El método del autor de tratamiento de úlcera gástrica y duodenal por terapeutica antiácida non-sistémica (trisilicato de magnesio, kaolin coloidal, y hidroxido de aluminio), con resultados en algunos cientos de casos, son descritos. Un estudio bibliográfico de la historia de la úlcera del estómago y duodeno, con casos reportados, desde Galeno hasta los escritores del año en cuerso, es presentado.

RIASSUNTO

L'uso del trisilicato di magnesio, kaolino colloidale, e dell'idrato d'alluminio nella terapia gastrica antiacida. Storia e metodi di trattamento dell'ulcera gastrica e duodenale

Viene riportato un metodo di trattamento dell'ulcera gastrica e duodenale coi sopraaccennati medicamenti, e il risultato in diversi centinaria di casi. Una completa bibliografia con presentazione di casi viene riportata.

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Correction

In the list of classes of members admitted to the International College of Surgeons at the last Convocation in New York City, appearing in the July issue of the Journal, the name of Dr. John W. Emhardt, of Indianapolis, Ind., was inadvertently classified as a Member. It should have appeared in the Fellowship list.

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Members of the Minnesota State Medical Association, under the leadership of the Association's council, paid tribute to the late **Drs. William J. and Charles H. Mayo** with a memorial pilgrimage on October 27 to Rochester. **Dr. George A. Earl,** St. Paul, president of the Association, presided at the ceremonies in Plummer Hall in the Mayo Clinic. **Dr. Edward L. Touhy,** Duluth, gave the address entitled, "An Expression from the Medical Profession of Minnesota." A procession to the cemetery followed

Dr. Thomas A. Shallow, F.I.C.S., has been elected to the Samuel D. Gross chair of surgery at Jefferson Medical College. Before this appointment, Dr. Shallow was professor of surgery at Jefferson. The position has been vacant since the death in 1933 of Dr. John Chalmers DaCosta, who had held the chair from 1910. The Gross professorship was established in 1910 by Mrs. Maria Gross Horwitz, Baltimore, in honor of her father, professor of surgery at Jefferson from 1856 to 1882. Dr. Shallow was graduated from Jefferson in 1911.

——o——

Professor Joshua Harold Burn, professor of pharmacology at the University of Oxford, has been nominated to be for five years a member of the General Council of Medical Education and Registration in the United Kingdom in succession to **Sir George Newman.**

INTERRELATIONSHIP OF SURGICAL CONDITIONS OF THE PELVIC AND ABDOMINAL VISCERA

ILLUSTRATIVE CASES*

WILLIAM SEAMAN BAINBRIDGE, A.M., Sc.D., M.D., C.M., F.I.C.S.
NEW YORK

THE subject of specialization is one that is reverted to again and again by writers in the field of medicine and surgery. The old horse-and-buggy doctors who handled all mental and physical ills which they were called upon to treat were really the advanced thinkers and pioneers in their art. It is the specialists who are reactionary in a sense, for they may follow the laws of ancient Egypt whereby each physician treated but one part of the human body, without consideration of the human mechanism as a whole.

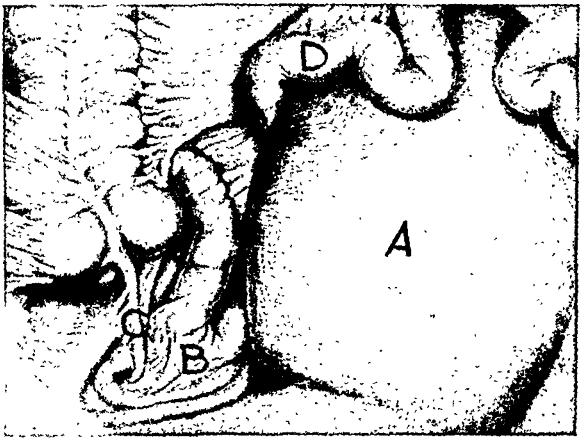

Fig 1. Case I · C.I.A. *A*, fibroid uterus. *B*, kinked ileum, with adhesions. *C*, appendix. *D*, distended loop of ileum proximal to site of partial obstruction

One cannot gainsay the fact that specialization has its great advantages, for it has resulted in epoch making progress. But it is not an unmixed blessing for, as in every other field of endeavor, ultra specialization in surgery may actually limit the horizon of the surgeon often to the detriment of the patient.

There are so many conditions of the pelvic cavity that are correlated with pathology in the upper abdomen, and vice versa, that any surgeon entering either cavity should be able to cope adequately as far as possible with conditions that are present in the entire area. It is often a matter of judgment, when there is much pathology present, to determine which is of primary importance and which secondary. This is not always a simple matter, as the writer has found important blood vessels of the proximal portion of the femur come from the shaft and from the synovial and capsular branches of both circumflex arteries. All these arteries run from a lateral source toward the medial portion of the epiphysis of the head. Therefore, any fracture through the neck cuts these arteries at the site of the fracture as they run inside the bone. As a result, *the head receives blood only from those arteries that enter the neck proximal to the line of fracture.*

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*Read at Annual Meeting of the Amer. Ass of Obst. Gyn. and Abd. Surg., [illegible] ngs

The most proximal of the vessels capable of nourishing the head enter the neck a few millimeters distal to the cervicocephalic line. Consequently, any fracture of the neck passing between these vessels and the head (proximal to the entry of the vessels) leaves the head without nourishment and causes its necrosis.

Fractures whose lines pass lateral to the entrance of the vessels mentioned are: (1) lateral or distal fractures, consisting of the varieties classically known as "trochanteric" and "cervico-trochanteric" and some of those known as "meso-cervical"; (2) medial or proximal fractures, those fractures whose lines pass medial to the entrance of the vessels mentioned, consisting of some of the "meso-cervical" and "cervico-cephalic" varieties of the classics.

1. *Lateral Fractures (Distal).* In this variety, the nourishment is sufficient; therefore, the head survives and union is possible. Thus an anatomical result can be expected in this variety if proper apposition of the fragments is obtained and maintained.

Perhaps a long period of immobilization in a cast would suffice, but in the aged we dread such immobilization more than an operation. We treat these cases by operative fixation done under local anesthesia. We do not believe it necessary to operate through an arthrotomy.

We do a "blind" fixation operation, using constantly radiological guidance. The technique varies according to the general condition of the patient. If the patient is strong, we prefer to do the fixation with an autogenous graft, using a special set of instruments, designed by us, which eases the task remarkably. These we will describe in our complete report. In *weak patients* we use a metallic nail and thus spare the patient the shock caused by removing an autogenous graft. We like the Sven Johansen nail, which is so well known as to need no description.

2. *Medial Fractures (Proximal).* In this variety, the nourishment is insufficient; therefore, necrosis of the head occurs, and no union can be expected, regardless of the type of treatment employed. Pseudarthrosis follows, and a painful hip, with great incapacity, results. Therefore, in these cases, *we take out the dead head* to make a place for the lateral fragment of the neck, which is fairly long in these cases and can be placed into the acetabalum to support it. Experience has taught us that enough adhesions and scar tissue contractions are formed to keep the neck in place so that the new joint is sufficiently stable. Of course, the patient limps, and has the so-called "gluteal gait," caused by the diminishing of the distance between the insertions of the pelvitrochanteric muscles. Nevertheless, he is able to walk, sit down, kneel, etc. In brief, he has enough hip function to carry on the reduced activities of an old man.

In *weak patients* we do nothing more than excise the head under local anesthesia. In *strong patients* we correct the incapacity by a subtrochanteric osteotomy, performed at the same time as the extraction of the head, through the same incision, and all under local anesthesia. The distal (lower) fragment of the femur is placed in abduction. This reestablishes the proper length of the muscles inserted upon the greater trochanter and places the neck stump in a very good position for weight bearing, namely, so that the forces pass through its axis. Immobilization, of course, is

Surgical procedure:
1. Supravaginal hysterectomy, Bland Sutton method
2. Right ovary and tube removed
3. Appendectomy
4. Adhesions relieved. Raw surfaces turned in as far as possible

Result: Excellent health many years; then lost track of

Case II. M.H. 41, female; widow
Operation: January 21, 1922
Conditions found:
1. Appendix chronically inflamed
2. Diverticula of cecum
3. Multiple fibroids of uterus.
4. Cystic ovaries

Surgical procedure
1. Appendectomy
2. Plication of cecum
3. Panhysterectomy

Result Since operation and up to the present time has been in perfect health

Case III F.M.B. 37, female; married.
Operation: March 18, 1914.
Conditions found.
1. Mucous ulcer in center of lesser curvature of stomach
2. Broad band of adhesions from proximal half of appendix to pelvis
3. Adhesions between ascending colon and right parietal peritoneum, causing partial obstruction, and dilatation of ileum from back pressure.
4. Left ovary buried in mass of adhesions attached to sigmoid colon, causing marked angulation.

Surgical procedure:
1. Gastric ulcer enfolded.
2. Abdominal adhesions relieved.
3. Left ovary freed from bed of adhesions; cysts removed, remaining portion stitched to broad ligament.

Note 1 Condition of patient was such as to preclude necessary pelvic repair at this time

Note 2 April 14, 1914 (while patient was still in hospital) divulsion and curettage, anterior colporrhaphy and perineorrhaphy performed.

Result: Patient in excellent health for 14 years; then lost track of

Case IV. H.C. 37; female; married.
Operation: June 26, 1915
Conditions found.
1. Last kink of pelvic colon markedly accentuated
2. Thickened peritoneum, three inches above normal terminal kink, bound down descending colon, causing angulation.
3. Appendix absent.
4. Great omentum adherent over left ovary, being attached to tube and lateral wall.
5. Uterus enlarged; contained five fibroids.
6. Part of right ovary and tube absent; remaining portion diseased and matted down by adhesions

Surgical procedure:
1. Adhesions and points of angulation relieved.
2. Uterus and remains of right ovary and tube removed.

Note: Patient had been advised by three surgeons to have double mammectomy for possible cancer. Believing that in this case breast condition was due to pathology in abdomen and pelvis, operator decided against surgical intervention on the breasts until effects of abdominal operation were noted.

Result: Patient regained perfect health and breast pathology completely disappeared

Case V. W.C.T.: 31; female; married.
Operation: November 10, 1922.
Conditions found:
1. Intestines on right side adherent to abdominal wall at site of previous celiotomy
2. Cecum rotated by bands.
3. Lower part of small bowel adherent tightly to fundus uteri, another loop adherent to second point of fixation on posterior wall of uterus, causing almost complete obstruction.
4. Appendix, left ovary, and tube absent.
5. Uterus retroflexed.

Surgical procedure.
1. Abdominal adhesions relieved.
2. Intestine detached from uterus; raw surface covered
3. Johnson-Willis suspension of uterus.

Result: At end of seven years reported in perfect health

Case VI M.W. 68; female; married
Operation: May 10, 1913
Conditions found:
1. Omentum adherent to peritoneum over bladder.
2. Thickened appendix attached to omentum at same point.
3. Transverse and ascending colon bou tightly together by omental adhes
4. Uterus double normal size; carcin body, irremovable.
5. Webbed adhesions fr over tubes and ova

- B. Medial: head dead; union impossible: *excision of head*
  - a. Weak patient: excision only
  - b. Strong patient: excision plus osteotomy

2. *Old Fractures:*
   - A. Nonunion:
     - a. Lateral fracture: internal fixation by arthrotomy
     - b. Medial fracture: excision of the head and ankylosis
   - B. Malunion:
     - Lateral fractures only: coxa vara traumatica: subtrocantheric osteotomy.

Of course, this is only a brief account of the matter in which only the more general facts are reported. It will be followed by a detailed report, with all the documents (including roentgenograms, illustrations of anatomical pieces and 3,200 feet of 16 mm. film).

This paper should be considered only as a summary. There are many more possibilities to be taken into account. For instance, it is perhaps possible for a fresh medial fracture, deeply impacted, to unite satisfactorily. It may be possible for the vessels of the lateral fragment to grow into the medial fragment, as if it were a graft. Of course, this cannot be the general case, and it is much safer to count upon the necrosis of the head.

The value of the methods herein reported are shown by the fact that since we have adopted them our results have changed completely.

SUMMARY

Methods of treatment of fracture of the femur in the aged, depending upon whether the head of the femur is living and the blood supply therefore adequate or whether the head is dead and the blood vessels destroyed, are described. Results have changed completely since the institution of these methods.

RÉSUMÉ

Individualization du traitement des fractures du col du fémur survenant chez les vieillards

Les méthodes de traitement des fractures du col du fémur sont discutées et étudiées. L'état de la tête du fémur et de sa vascularisation adéquate ou non nous guidera dans le choix de la methode à employer. Les resultats obtenus par l'auteur ont été fortement améliores depuis l'adoption de cette ligne de conduite.

ZUSAMMENFASSUNG

Individualisierung der Oberschenkelhalsfrakturbehandlung bei alten Patienten

Der Verfasser beschreibt die Methoden der Oberschenkelhalsfrakturbehandlung bei alten Patienten die entweder darauf beruhen dass der Oberschenkelkopf lebt und seine Blutversorgung genügend ist, oder ob der Kopf tot ist und die Blutgefässe zerstört sind. Die Ergebnisse haben sich vollkommen geändert seit der Anwendung dieser Methoden.

SUMARIO

Individualización del Tratamiento de Fracturas del Cuello del Femur en Personas de Edad

El método de tratamiento de fracturas del cuello del femur en el viejo, dependiendo en la vida de la cabeza del femur debido á irigación adecuada ó la muerte de la misma por destrucción de los vasos, es descrita. Los resultados han cambiàdo completamente desde la institución de éste método.

RIASSUNTO

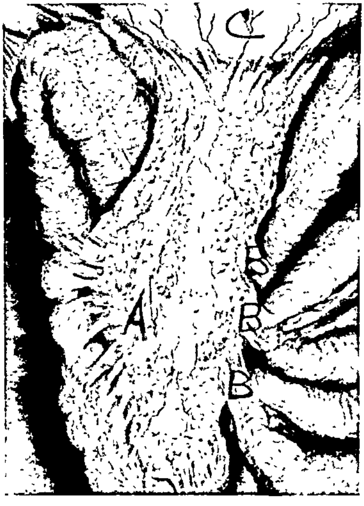
Individualizzazzione del trattamento della frattura del collo del femore, nei vecchi

Vengano discussi e studiati i metodi di trattamento della frattura del collo del femore nei vecchi. Lo stato della testa del femore e la sua vascolarizzazzione adeguata o no, guideranno alla scelta del metodo da usare. Con l'adozione di simile procedura, i risultati della cura sono assai più saddisfacenti.

Case VIII. W.S.A 44; female; married
Operation: January 22, 1915.

Conditions found.

1. Postoperative hernial sac, size of orange, containing adherent omentum, divided into number of compartments by adhesions.
2. Right side of great omentum adherent to apex of bladder, middle portion adherent to scar of previous abdominal operation, and left side amalgamated with abdominal wall and hernial sac.



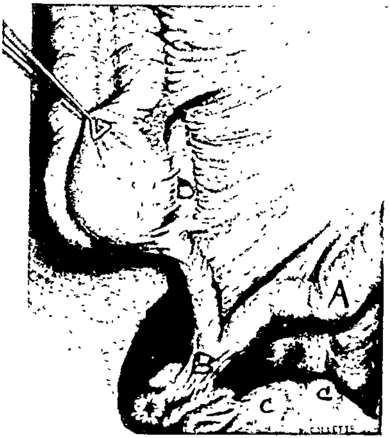


Fig. 4, left. Case IX: W.W C *A*, partially obstructed ileum. *B*, adhesion of ileum to right ovary and tube *C*, uterine fibroids. *D*, terminal ileum adherent to cecum.

Fig. 5, right. Case IX W.W.C A, omentum attached to and twisting colon. B, adhesions, small bowel. *C*, stomach pulled down and fixed to abdominal wall.

3. Cecum elongated, mobile, prolapsed into pelvis.
4. Appendix, left ovary, and tube absent
5. Peritoneal band of adhesions from last kink of pelvic colon and left broad ligament grasped loop of rotated small bowel, forming fixed chronic volvulus.
6. Band of adhesions from fundus uteri attached itself to same loop of small intestine at a distance of 7 inches from other band, holding intestine firmly in rotated position.
7. Right ovary atrophic; right tube adherent to horn of uterus and kinked on itself.
8. Adhesions around gallbladder.

Surgical procedure:

1. Herniotomy.
2. All adhesions relieved.
3. Organs placed in proper position.

Result: Excellent recovery.

Case IX. W.W.C.: 38; *female; married.*
Operation: January 13, 1915.
Conditions found:

1. Great omentum attached to abdominal wall below umbilicus and to ascending colon from cecum to hepatic flexure Omentum also attached to coils of small intestine which were, in turn, attached to each other.
2. Appendix absent.
3. Extensive adhesions between last three inches of ileum, the cecum and cyst of right ovary, Fallopian tube and wall of pelvis.
4. Uterus enlarged; contained a number of fibroids.
5. Large serous cyst, pro'

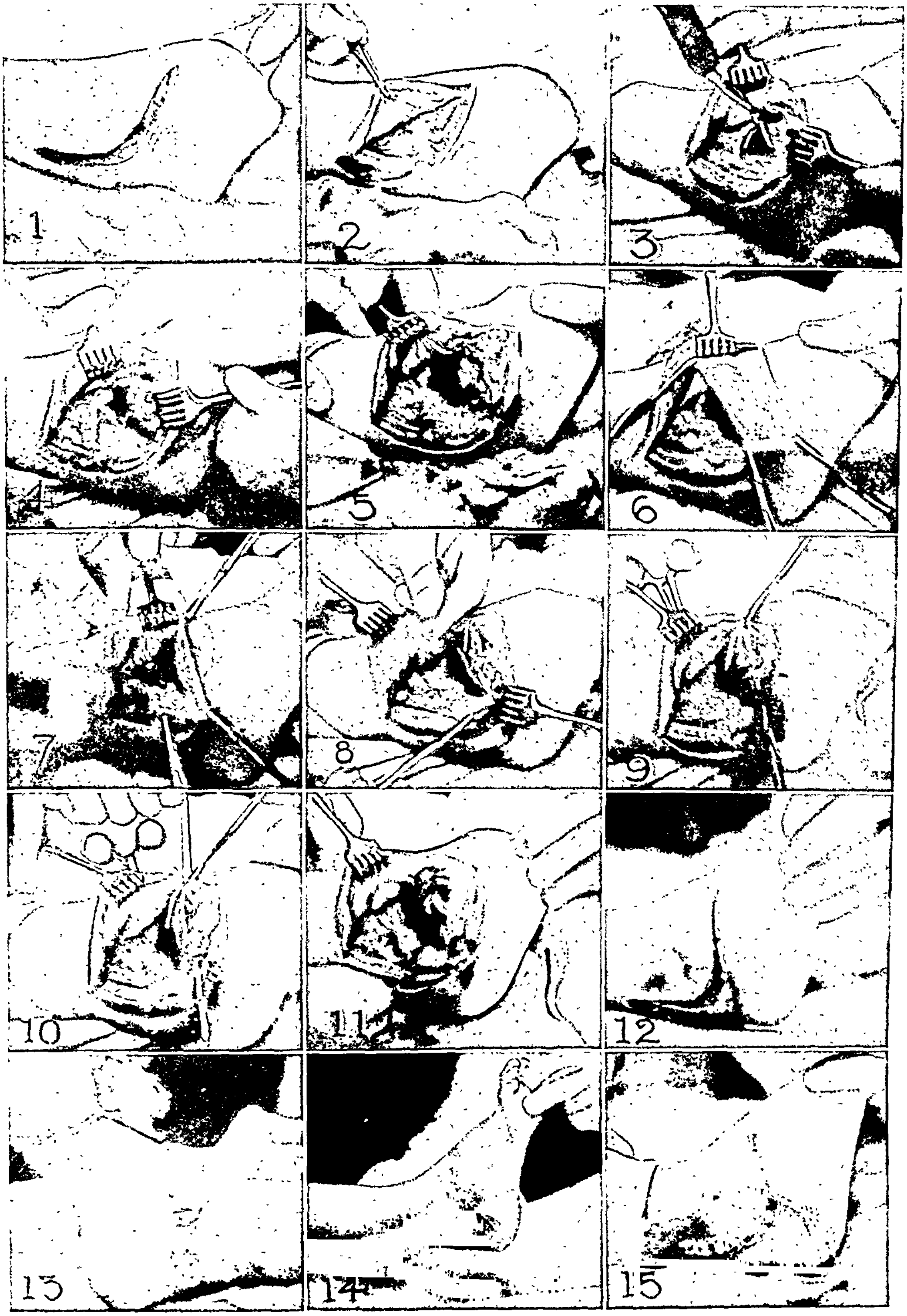


Fig. 1, Incision for tibrotarsal joint arthroplasty. Fig. 2, Retracted flap. Fig. 3, Separation of bones with Putti chisel. Fig. 4, Synosteosis following separation. Fig. 5, Spnosteosis after chiselling. Figs. 6-7, Introduction of fascia flap. Figs. 8-10, Fixing fascia flap. Fig. 11, Fascia flap in place. Fig. 12, Approximation of wound edges. Fig. 13, Gauze compress holding fascia flap in place. Fig. 14, Result: Foot at right angles; horsehair drain in place. Fig. 15, Finished arthroplasty, lateral view.

Surgical procedure:

1. Stump of appendix removed.
2. Adhesions relieved.
3. Ovarian cysts punctured
4. Fibroid of uterus removed

Result. *Excellent* Patient regained perfect health.

Case XII. M.T.S., 24, female; married
Operation: January 29, 1915

Conditions found

1. Lane's band of *terminal ileum forming a* V, *lower end of which was in true pelvis*

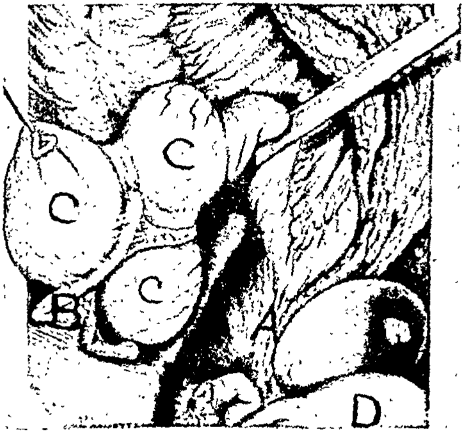


Fig 7. Case XIII M O A, ileopelvic band, *B*, diseased appendix *C*, diverticulated cecum *D*, uterus.

2. Large, redundant, dilated cecum
3. Left ovary enlarged, cystic
4. Strong band of adhesions from pelvic colon to left ovary, rotating colon downward.

Surgical procedure:

1. Adhesions relieved
2. Cecum plicated
3. Left ovary removed.

Result: Excellent.

Case XIII. M L.O. 37, *female*; widow
Operation: *February 23, 1917*

Conditions found:

1. Fibroadenoma, right breast.
2. Great *omentum* bound transverse colon tightly to abdominal wall and to scar of previous celiotomy, to right broad ligament, and to *right* ovarian *cyst.*
3. Tube on right side kinked and inflamed.
4. Adhesions from pelvic *colon* to posterior wall of broad ligament and to left tube, kinking it.
5. Last loop of pelvic colon attached to Fallopian tube.
6. Marked ileopelvic band from *free margin* of terminal ileum to pedicle of *ovarian* cyst; band *so tight it had rotated terminal* ileum so that upper surface of mesoappendix lay almost downward.
7. Appendix thickened, contained fecal pus
8. Rectocele and cystocele

Surgical procedure

1. Fibroadenoma of breast *removed*
2. Divulsion and curettage
3. Anterior colporrhaphy.
4. Perineorrhaphy.
5. Pelvic and abdominal adhesions relieved
6. Right tube removed.
7. Ovarian cyst removed.
8. Suspension uterus.
9. Appendectomy.
10. Plication cecum.

RÉSUMÉ

L'Arthroplastie de l'articulation tibia-tarsale

L'auteur décrit minutieusement la méthode d'arthroplastie à laquelle il a recours dans les cas d'ankylose de l'articulation tibia-tarsale. Il a simplifié l'opération en choisissant l'approche lateral après résection temporaire de la malléole externe. Les résultats fonctionnels sont très satisfaisants.

SUMARIO

Artroplastia de la Articulación Tibiotarsal

El autor describe, paso por paso, su método por artroplastia el cual el usa en casos de anquilosis de la articulación tibiotarsal. El ha simplificado ésta operación eligiendo el aproche lateral despues de resección temporaria de el maleolo de el peroné. Los resultados funcionales han sido muy satisfactorios.

ZUSAMMENFASSUNG

Arthroplastic des Tibio-Tarsal-Gelenkes

Der Autor beschreibt schrittweise seine Arthroplastiemethode, die er bei einer Versteifung des Tibio-Tarsal-Gelenkes anwendet. Er vereinfachte diese Operation dadurch, dass er das Gelenk von lateral angeht, nachdem er den Knöchel der Fibula vorübergehend reseziert hat. Die funktionellen Ergebnisse sind sehr gut.

RIASSUNTO

Artoplastica dell'articolazione tibio tarsica

L'A. descrive, passo per passo, il suo metodo di artoplastica nei casi di anchilosi della articolazione tibio tarsica. Egli ha semplificato questa operazione, nello scegliere la via laterale, dopo resezione temporanea del malleolo delle fibula. I risultati funzionali sono stati molto soddisfacienti.

—o—

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NATIONAL ASSEMBLY

THE NATIONAL ASSEMBLY OF THE UNITED STATES CHAPTER OF THE INTERNATIONAL COLLEGE OF SURGEONS WILL BE HELD ON FEB. 11 TO 14, 1940, AT VENICE, FLORIDA, UNDER THE DIRECTION OF DR. FRED H. ALBEE, INTERNATIONAL PRESIDENT-ELECT, AND THE PRESIDENCY OF DR. FREDERICK M. DOUGLASS, PRESIDENT OF THE UNITED STATES CHAPTER AND CHAIRMAN OF THE PROGRAM COMMITTEE.

Result: First postoperative week stormy. At present time, almost two months after operation, in excellent condition.

SUMMARY

From an experience of thousands of cases, a number of case histories are presented which confirm the author's thesis that pelvic pathology often is associated with abdominal pathology, and vice versa, and that the surgeon operating in one field must be prepared to deal adequately with conditions he may find in other fields, if he would expect satisfactory results to his patient. In other words, he should regard all pathologic conditions throughout the body as part of one pathologic picture and not as separate specialized entities to be dealt with individually by different specialists.

RÉSUMÉ

Rapport existant entre les conditions chirurgicales des viscères abdominaux et celles des viscères pelviens

L'auteur présente des cas qui confirment sa thèse que souvent les états pathologiques du bassin sont associés ou coexistent avec des états pathologiques abdominaux, et vice versa. Le chirurgien, pour obtenir les meilleurs résultats, doit corriger adéquatement les lésions des deux cavités. Toutes les manifestations pathologiques doivent être envisagées comme une seule entité et soignées si c'est possible simultanément. Ainsi sont obtenus les résultats les plus satisfaisants.

ZUSAMMENFASSUNG

Gegenseitige Beziehung zwischen chirurgischen Verhältnissen der Becken und Baucheingeweide · Bericht von aufschlussreichen Fällen

Aus der Erfahrung von tausenden Fällen wird eine Reihe von Krankengeschichten veröffentlicht, die die Ansicht des Verfassers, dass Erkrankungen des Beckeninhaltes oft mit Erkrankungen der Baucheingeweide und umgekehrt einhergehen bestätigen, daher muss der Chirurg, der in einer dieser Regionen operiert, und befriedigende Erfolge für seine Patienten erwartet, vorbereitet sein, auch Zustände in gleicher Weise zu behandeln, die er unter Umständen in einer anderen Region finden kann; in anderen Worten, er muss alle pathologischen Zustände in ganzen Körper als Teil eines gemeinsamen Krankheitsbildes betrachten und nicht als selbständige Zustände, die von verschiedenen Spezialisten individuel behandelt werden müssen.

SUMARIO

Interrelación de las Condiciones Quirúrgicas de la Pelvix y las Viceras Abdominales: Casos Ilustrativos

Por una experiencia de miles de casos, un número de historias clínicas las cuales confirman la tesís del autor que la patología de la pelvix es á menudo asociada con la patología abdominal, y vice versa, y que los cirujános operando en un campo deben de estar preparado adecuadamente para atacar condiciones que él pueda encontrar en otro campo quirúrgico, si él espera resultados satisfactorios para su enfermo. En otra palabra, él debe de considerar todas las condiciones patológicas á través del organismo como parte de un cuadro patológico y no como entidades separadas para ser atendidas con individualidad por especialidades distintas.

RIASSUNTO

Relazione delle condizioni chirurgiche dei visceri addominali e pelvici

L'autore sostine che gl

in his experience; but he would feel himself handicapped and thwarted if his horizon did not encompass that which is above the pelvic brim as well as below it.

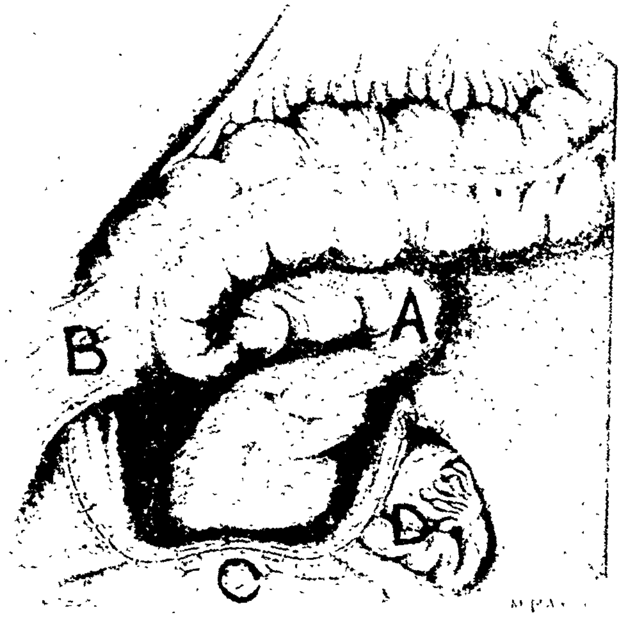

Fig. 2. Case I: C.E.A. *A*, sigmoid. *B*, adhesion of sigmoid to right side above pelvic brim. *C*, shell of cervix with line of sutures, following hysterectomy. *D*, normal left tube and ovary.

The visceral anatomy of the abdomen and pelvis, when studied in a prone body, does not always give a correct picture of many conditions from which the patient suffers. The surgeon must visualize the organs in the upright position and the effect of sitting or walking two-thirds of the daily twenty-four hours. In demonstrating the importance of this point the writer often has placed the patient with the abdomen open, in the Trendelenburg and then in the reverse Trendelenburg positions. Conditions otherwise obscured or apparently absent then come into view and can be dealt with more adequately.

From some thousands of abdominal sections, I have selected a series of cases to present to you to demonstrate the points of this paper. A number of the cases operated upon many years ago are especially given so that end results may be noted. In my files I have the clinical history, physical examination, roentgenologic findings, laboratory reports and drawings of exact conditions found at time of operation, of over a thousand selected laparotomies.

I wish to emphasize that abdominal and gynecological surgery are in the same family and that any limited viewpoint on the part of the ultra-specialist may cripple his surgical work, with often the same effect on the patient.

CASE REPORTS

Case I. C.E.A.: 44; female; married.
Operation: December 9, 1913.

Conditions found:

1. Uterine fibroid, size of six months' pregnancy.
2. Cystic right ovary.
3. Extensive adhesions between cecum and right half of anterior abdominal wall, between sigmoid and lower ileum and right broad ligament, binding down appendix to posterior wall of pelvis.

THE ETIOLOGY OF BILE PERITONITIS

KARL SCHLAEPFER, M.D.
MILWAUKEE

BILE peritonitis by definition is the presence of bile in the peritoneal cavity. It results from the mechanical rupture of an apparently normal bile duct or of the gall bladder. An unusual trauma is necessary for such an occurrence and the concomitant hemorrhage from the injured liver tissue dominates the clinical picture. In another group of instances a necrotizing cholangitis or cholecystitis brings about a circumscribed necrosis of the wall with perforation, usually at the site of an impacted gall stone, and an effusion of highly infected bile. The exudate is purulent and its biliary component is no longer recognizable. These observations are clinically well established and commonly are present with the diffuse purulent peritonitis.

In this communication, we are interested primarily in an intermediate group of cases in which clear or turbid bile is found in the peritoneal cavity. The bile content is striking. On first examination at operation or at necropsy, often no point of escape for the bile is detected so that the assumption has been made by Clairmont and von Haberer that permeation takes place through the intact gall bladder wall.

In the case reported by W. Smith from the Department of Pathology, Yale School of Medicine, and in fourteen other observations recorded in the literature, thorough gross and microscopic examination revealed the point of rupture to be either in the intrahepatic course of the biliary ducts or in the gall bladder.

In eighteen similar instances the point of rupture was not found at operation or necropsy. Observations made only at the time of operation are not conclusive if the point of rupture is not found. The methods for ascertaining the path of escape of bile are restricted, the available time being limited for the patient's sake. If the gall bladder is suspected, it can be examined more thoroughly after its operative removal. Cases in which only the operative examination was made are therefore not included in this report. The fifteen cases previously mentioned form the basis for the present discussion.

AGE AND SEX

Distribution as to age and sex is shown in the accompanying table:

POINT OF PERFORATION

Age	*Intrahepatic Duct* Male	*Intrahepatic Duct* Female	*Gall Bladder Wall* Male	*Gall Bladder Wall* Female
6½			1	
32			1	
48-50		4	1	
51-60		1	2	
61-70	1	1		1
71-80		1		
83		1		
Total	1	8	5	1

The average age is between 50 and 60. In the group of cases of ruptured intrahepatic duct the females predominate, whereas in the series of cases of perforation of the gall bladder, the majority are male.

A brief review of these very interesting observations is grouped according to the site of rupture. First, instances of a ruptured intrahepatic (subserous) duct will be discussed.

RUPTURE OF INTRAHEPATIC DUCT

Obstruction By Calculi. In this group belongs the observation already published by W. Smith in the *Annals of Surgery*. In the following abstract the gross and microscopic fi pertain to the origin of are included:

6. Enlarged lymphatic glands along pelvic vessels; evidently extension of malignancy.

Surgical procedure:

1. Abdominal adhesions relieved.
2. Appendix removed.

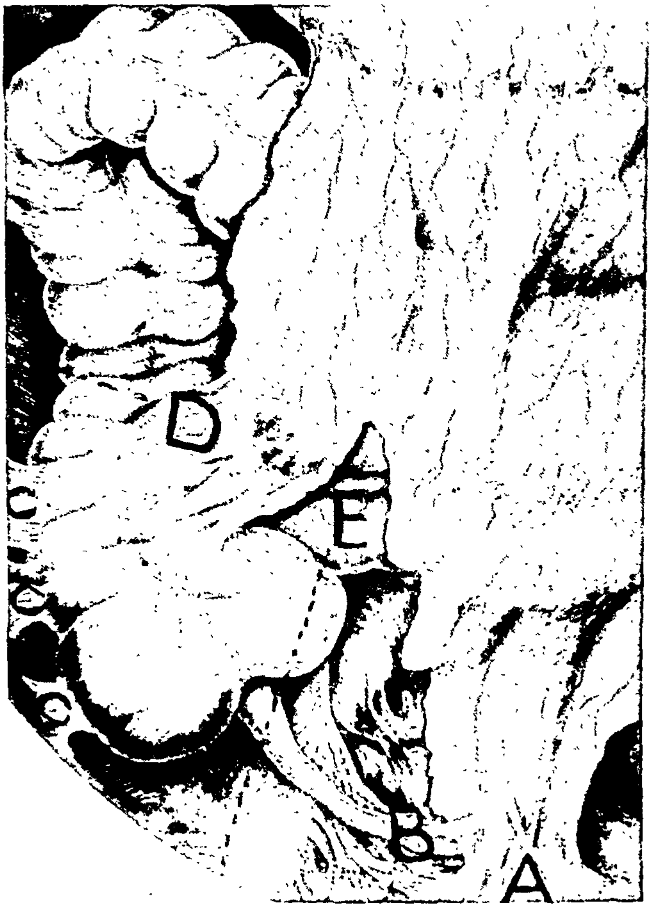

Fig. 3. Case VI: M.W. *A*, omentum adherent to bladder. *B*, appendix attached to great omentum. *C*, pericecal adhesions. *D*, adhesions of great omentum to ascending colon. *E*, dilated, obstructed ileum.

3. Starvation ligature and lymphatic block, with removal of lymphatic glands from receptaculum chyli to obturator foramina.

Note: Operation purely palliative to relieve intestinal obstruction which was fast becoming acute.

Result: Patient relieved of agonizing pain, of toxic absorption, of uterine hemorrhage. Gained in weight and was very comfortable during year of life following operation.

CASE VII. F.J.: 65; female, widow.

Operation: February 17, 1915.

Conditions found:

1. Left tube, bladder, loop of ileum, and two points of pelvic colon adherent to fundus uteri.
2. Degenerated fibroid adherent in culdesac.
3. Sac of pus between bladder and uterus.
4. Terminal ileum fixed by inflammatory bands.
5. Tip of appendix fixed to uterus by adhesions.

Surgical procedure:

1. Intestinal adhesions relieved.
2. Appendectomy.
3. Viscera detached from uterus.
4. Panhysterectomy.

Result: Excellent. Last heard from 16 years after operation; 81 years of age. Perfect health except for fractured hip.

ruptured. When the liver was compressed, bile escaped through the point of perforation. The wall around the opening showed diffuse round cell infiltration with increase in connective tissue.

Also in this case an obstruction within an intrahepatic duct superimposed upon an occlusion of the common duct had brought about an increasing dilatation of the bile ducts in the obstructed zone. This had extended finally to the subserous ducts, with rupture of one duct at the site of an acute necrotizing inflammation.

Vogel reported the case of a woman, 50 years old, with bile peritonitis due to rupture of a dilated subserous bile duct on the lower surface of the left lobe of the liver.

Ermer performed an autopsy on a 73 year old woman in whom 500 cc. of bile stained fluid were found in the peritoneal cavity. Hidden underneath shreds of fibrin within a groove of the right lobe of the liver a ruptured dilated subserous duct was found. The common duct was completely occluded by a stone.

Obstruction By New Growth. In the following cases new growths obstructed the bile ducts. Karrillon's patient, a woman 59 years of age, died from cancer of the gall bladder with metastases occluding the left hepatic duct. The surface of the left lobe of the liver showed numerous dilated subserous bile ducts, measuring 1 cm. in diameter, on the anterior and posterior surfaces. One of these dilated cystic ducts had ruptured. On compression of the liver lobe, turbid bile escaped through the point of rupture. Cancer nodules were scattered throughout the liver.

Ermer reported the case of a woman, 68 years old, whose abdominal cavity showed at necropsy a large amount of brownish green fluid mixed with fibrin. A cancerous growth occluded the common duct. In the "Schnürfurche" (sulcus) of the right lobe, 4 cm. from the gall bladder, a pin point opening was noted. Fluid injected in the hepatic duct escaped through this fistulous opening and contained numerous stones. Tumor metastases were found in the liver and in the regional lymph nodes.

Levin made a postmortem examination of a woman, 50 years of age, whose abdominal cavity contained 1,100 cc. of turbid yellowish fluid. Metastases from a pyloric cancer encircled the common duct, which was greatly dilated above the point of obstruction, measuring 2 cm. in diameter. The dilatation involved the hepatic ducts in their extra and intrahepatic courses. Between the diaphragm and the right lobe of the liver a pocket containing 2,000 cc. of bile stained fluid was opened. Two greatly dilated subserous ducts, each the size of a pencil, had ruptured into this subdiaphragmatic space. All the intrahepatic ducts of this area were greatly dilated. Microscopically, no evidence of cholangitis was found.

RUPTURE OF GALL BLADDER

Rupture of the gall bladder occurs at two places of predilection, namely: at the neck of the bladder and near the attachment of the bladder to the liver. When encountered at the neck, a diverticulum of Luschka which extends into the subserosa must be considered.

Nauwerk and Lübke (1913) published an observation in a man, 56 years old, who had a large amount of sterile bile in the peritoneal cavity. At necropsy the gall bladder showed adhesions to the duodenum and to the transverse colon. The gall bladder and the bile ducts were distended with water, but no fluid escaped. To the right of the round ligament a dilated subserous duct was found intact. Moderate dilatation of the common duct was the only finding of note. No remark was made about the condition of the hepatic ducts or possible calculi in the cystic or common ducts. Microscopically, a rupture was found in the wall of the gall bladder near its situated in region from which left tube and ovary had been removed at previous operation. Cyst adherent to posterior wall of abdomen and intestinal coils; shutting off true pelvic cavity.

Surgical procedure:

1. Right ovary, tube, uterus, left parovarian cyst removed *en masse*.
2. Abdominal adhesions relieved; raw surfaces too extensive to be covered by suturing; sterilized liquid paraffin distributed over area.

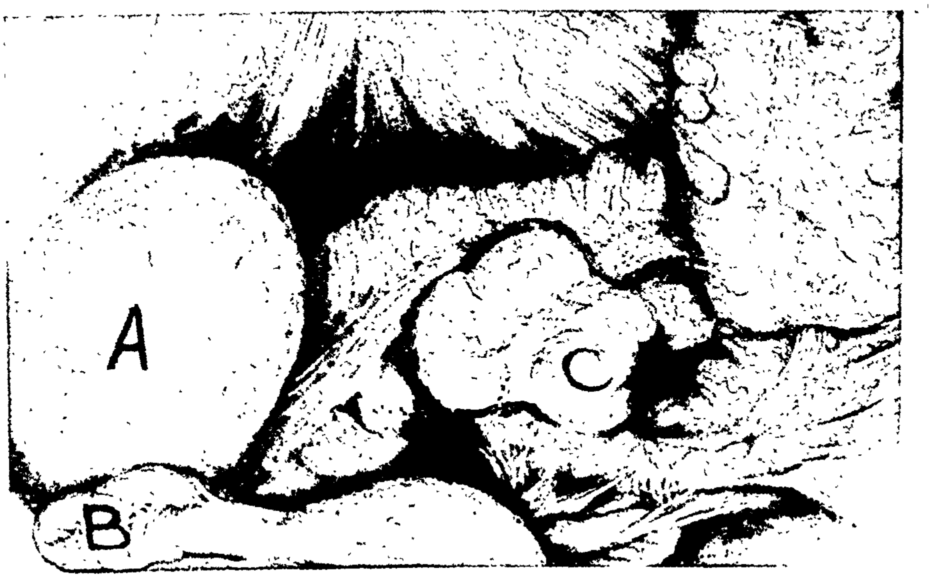

Fig. 6. Case XIII: M.O. *A*, ovarian cyst. *B*, kinked, inflamed right tube. *C*, pelvic colon attached to Fallopian tube.

Result: Excellent. Ten years later husband of patient, a physician, reported that since operation wife had been in perfect health

Case X. H.E.H.: 29; female; married

Operation: October 13, 1916.

Conditions found:

1. Uterus anchored towards left by strong ligament, firmly attached to abdominal wall (evidently attempt at ventral suspension at previous operation)
2. Two appendices epiploicae attached to ligament, rotating pelvic colon to outer side.
3. Congested left tube and ovary; otherwise normal
4. Band between abdominal wall and pelvic colon, situated three inches below beginning of accentuated last kink, extended from brim of true pelvis on broad ligament, to round ligament on left side, and in circular direction toward pelvic colon, causing considerable obstruction.
5. Band from cecum to right broad ligament.
6. Appendix absent.

Surgical procedure:

1. Adhesions relieved.
2. Uterus freed; Johnson-Willis suspension.
3. Appendices epiploicae removed.

Result: Patient continued very well for 17 years; then following severe accident, began to have marked pelvic and abdominal pain, necessitating operation in another city. In excellent health at present time.

Case XI. W.S.L.: 34; female; married.

Operation: April 16, 1913.

Conditions found:

1. Cecum adherent to right parietal wall, to transverse colon and to peritoneum in right iliac fossa.
2. Appendix absent, except butt end, which was free.
3. Below ileocecal valve, band forming an X, ran to iliac fossa and involved right ovary.
4. Fibroid tumor of uterus.
5. Cysts of right ovary.
6. Sigmoid colon adherent to left round ligament, to broad ligament and to left side of pelvic wall.

liver through the liver to the hilum. In two instances (Smith, Nauwerk) concretions were found within the intrahepatic ducts, and an impacted stone (or a new growth) occluded the common duct in the illness that proved fatal.

In every instance a thorough examination of the dilated bile ducts for possible concretions would undoubtedly widen the scope of evidence. Some of these calculi may escape through the point of rupture into the peritoneal cavity and can be recovered only from the fluid.

EXPERIMENTAL STUDIES

In experiments performed on rabbits, partial occlusion of the common duct was combined with ligation of the cystic duct, thus eliminating the gall bladder. These experiments, which were intended to illustrate the effect of an obstruction in the common duct on the intrahepatic ducts, can be summarized as follows: Great dilatation of the extrahepatic ducts resulted, and in a few instances even the larger branches of the intrahepatic ducts enlarged for a short distance. In no observation did the dilatation extend into the smaller branches of the hepatic ducts or become visible on the surface of the liver. Unfortunately, as all the animals died from rapid emaciation within four weeks, the duration of the experiments was greatly limited.

Repeated attempts to produce partial occlusion of one hepatic duct in rabbits failed, either because the animals did not stand the operation or because a pressure necrosis resulted at the site of the occlusion. In one instance in which a calculus resulting from an injection of HCl into the gall bladder blocked one hepatic duct, a cystic dilatation of all the hepatic branches of this duct was observed. This liver lobe had an irregular nodular appearance. The other lobes were normal. This one experiment points to an obstruction within the intrahepatic duct as essential for the dilatation of the branches draining into the one duct.

ETIOLOGY

Rupture of a dilated subserous bile duct in cases in which no infection of the bile is present is explained by suddenly increased intra-abdominal pressure. These instances are extremely rare. They are not included in our survey since the point of escape was not ascertained.

In all observations herein reported we were dealing with chronic cholangitis, and for these cases the explanation given by Nauwerk seems the most plausible, although it has not been confirmed experimentally. According to Nauwerk, chronic obstruction of the biliary duct causes stasis of the bile and dilatation of the corresponding bile ducts. Increasing dilatation interferes with the vascular supply to the wall and finally results in local necrosis, especially when bacterial toxins mix with the inflammatory exudate. Under the effect of a sudden elevation of the intra-abdominal pressure, a rupture of the dilated duct occurs through the capsule of Glisson, and the bile escapes into the peritoneal cavity.

In the observations with rupture of the gall bladder, some shreds of fibrin on the serous surface of the gall bladder were the only findings on gross examination. Only serial sections brought evidence of a leak in the wall at the site of a circumscribed necrotizing cholecystitis.

Rupture of the extrahepatic ducts is always the result of a pressure necrosis by a calculus in the presence of acute purulent cholangitis. The bile character in the exudate is no longer recognizable

Experimentally we produced dilatation of the extrahepatic ducts on rabbits and dogs by occlusion of the common duct in its lowest portion; in all instances escape of bile was due to a pressure necrosis at the place where the rubber band had been placed around the duct.

SUMMARY

Escape of lear or turbid peritoneal c ity may res

Result: Uninterrupted recovery. Patient last seen July, 1939. Perfectly well during these 22 years.

Case XIV. K.M.E.: 37; female; single.
Operation: February 7, 1917.
Conditions found:

1. Great omentum tightly adherent to abdominal wall, displacing transverse colon over ascending colon into right flank.
2. Large right ovarian cyst, size of six months' pregnancy, bound down by adhesions to posterior abdominal wall.
3. Uterus adherent to pelvic colon behind cyst.
4. Left ovary cystic, size of large orange, adherent to rectum.
5. Terminal coil of small bowel bound down by adhesions between pelvic wall and gut, and between gut and ovarian cyst, causing chronic intestinal obstruction with weeks of vomiting.

Surgical procedure:

1. Adhesions relieved.
2. Cyst of degenerated right ovary removed.
3. Diseased left ovary removed.
4. Uterus suspended in proper position.

Result: After stormy convalescence, including severe attack of gastric tetany, recovered perfect health; for past 22 years actively at work as Superintendent of Nurses of missionary hospital in Korea.

Case XV. V.B.: 52; female; widow.
Operation: March 27, 1913.
Conditions found:

1. Lane's kink.
2. Mobile, rotated cecum.
3. Long appendix, which acted as ligament and restrained cecum from complete rotation.
4. Marked so-called Jackson's membrane.
5. Terminal ileum adherent to true pelvis.
6. Irremovable carcinoma of uterus, upper part of vagina, base of bladder, and encroaching on rectum.
7. Left ovary fibroid, adherent to sigmoid.

Surgical procedure:

1. Abdominal adhesions relieved.
2. Appendectomy.
3. Small omental graft placed over raw surfaces of ileum.
4. Ovaries, tubes, and pelvic glands from obturator foramina removed.
5. Starvation ligature and lymphatic block.

Note: Operation palliative. Pelvic malignancy complicated by intestinal pathology.

Result: Patient relieved of many distressing symptoms and lived nearly a year in comparative comfort.

Case XVI. E.L.: 24; female; married.
Operation: May 7, 1915.
Conditions found:

1. Firm adhesions bound cecum and ileum to uterus and right ovary.
2. Ileal obstruction with distended duodenum.
3. Numerous uterine fibroids.
4. Right ovary cystic.

Surgical procedure:

1. Adhesions freed.
2. Appendectomy.
3. Uterus and right ovary removed.

Result: All symptoms, gastrointestinal and pelvic, relieved. Well for some years, then lost track of.

Case XVII. W.B.: 49; female; single.
Operation: March 3, 1917.
Conditions found:

1. General enteroptosis.
2. Duodenum dilated to size of small wrist.
3. Appendix underhung, so placed as to shut off terminal ileum when patient was erect.
4. Cecal band attached to Fallopian tube with two cysts.
5. Bands across ascending colon to hepatic flexure almost causing obstruction of large bowel.
6. Accentuated last kink.

Surgical procedure:

1. All adhesions relieved.
2. Cysts of Fallopian tubes removed.
3. Appendectomy.

Result: From chronic invalidism to perfect health for many years; then lost track of.

Case XVIII. G.L.H.: 58; female; single.
Operation: July 18, 1939.
Conditions found:

1. Appendix tied down by adhesions under terminal ileum, causing narrowing of outlet of small bowel with patient erect; contained fecal pus.
2. Ovaries atrophic.
3. Uterus atrophic; fibroid size of English walnut in fundus.
4. Gallbladder thickened; seat of chronic inflammation; no stones.
5. Strong band from fundus of gallbladder down to entrance of cystic duct into common bile duct. Band went across and indented duodenum; extended to transverse colon near hepatic flexure and suspended gut.

Surgical procedure:

1. Appendectomy.
2. Cholecystectomy.
3. Band removed; raw surfaces covered as far as possible.

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RÉSUMÉ

L'étiologie de la péritonite biliaire

Le déversement de bile claire ou turbide dans la cavité peritonéale peut résulter d'une rupture sous-séreuse d'un conduit biliaire ou de la vésicule biliaire.

La rupture d'un conduit biliaire sous-séreux résulte souvent d'une occlusion intermittente ou continue (partielle) d'un conduit biliaire par calculs accompagnés de cholangite chronique, un neoplasme peut être le facteur causatif. Dans tous ces cas, on trouve une obstruction (partielle ou complète) du choledoque. On trouve aussi un dilatation des petits conduits biliaires sur la surface du foie. Les ruptures de la vésicule biliaire surviennent ou dans la région du fond de la vésicule près de son attachement au foie ou au col de la vessie. Il ne faut pas meconnaître une rupture du diverticule de Luschka. Une inflammation chronique avec poussée aiguë peut entraîner une nécrose locale circonscrite déterminant une perforation La rupture d'un conduit biliaire extra-hépatique resulte toujours d'une nécrose due à un calcul enclavé et associée à une cholangite phlegmoneuse aiguë.

ZUSAMMENFASSUNG

Die Etiologie der Gallen-Peritonitis

Das Entweichen von klarer oder trüber Gallenflüssigkeit in die Bauchhöhle kann von Platzen eines subserosen Gallenganges oder der Gallenblase herrühren.

Das Platzen eines subserosen Gallengangs ist das Ergebnis eines intermittierenden oder dauernden Verschlusses eines intrahepatischen Ganges durch Steine mit begleitender chronischer Cholangitis. Ein neoplastischer Tumor kann dieselbe Wirkung hervorrufen. In all diesen Fällen findet man zusätzlich einen Verschluss des Ductus Choledochus. Dies vermag leicht die Aufmerksamkeit von dem hauptsächlichen, oben erwähnten ursächlichen Faktor abzulenken welcher für die Erweiterung der kleinen Gallengänge bis zur Fläche der Leber verantwortlich ist.

Platzen der Gallenblase geschieht entweder in der Fundusgegend nahe ihrer Befestigung an der Leber oder in der Halsgegend. In zweiter Hinsicht muss ein geplatzter Luschka'scher Divertikel als ursächlicher Faktor angesehen werden. Eine chronische Gallenblasen Entzündung mit einer akuten Verschlimmerung ist verantwortlich für die umschriebene Nekrose, welche zur Perforation führt.

Ruptur eines Gallengangs ausserhalb der Leber ist immer das Ergebnis einer Darmnekrose veranlasst durch einen eingekeilten Gallenstein in Anwesenheit einer akuten phlegmonischen Gallengangentzündung.

SUMARIO

La Etiologia de Periton

El escape de bilis cl
dentro de la cavidad p

logici pelvici sono spesso associati con stati patologici addominali. Tesi confermata dell'esperienza di una casuistica di miglioria di pazienti. Si che il chirurgo che opera in un campo, deve essere preparato ad ogni evenienza per condizioni patologiche in sede diversa. In altre parole, il chirurgo deve considerare le condizioni patologiche del malato come entità a se, e non come condizioni separate, da essere trattate da più specialisti.

Pasteur Institute, Paris

Pasteur Institute of Paris, which has served as a model for practically every large experimental laboratory in the world, will soon enter upon its fifty-third year. Built by international public subscription, it was opened in 1888. Appropriate ceremonies marked its fiftieth anniversary, with President Albert Lebrun and a thousand scientists from all over the world in attendance to honor Pasteur and the work of the Institute.

Three Georgian-style buildings which contain 68 laboratories inhabited by 218 scientists comprise the Institute, which is situated near the Invalides, where Napoleon is entombed. Besides this there are many laboratory annexes throughout Paris, a large library, a hospital, a model monkey center for experimental studies, and a farm at Villeneuve-l'Etang, near Paris. The outstanding outgrowth of the Institute is the Curie Cancer Center which has 14 branches in Indo-China, North Africa, Greece, Persia, China and other places beyond the sea.

No single laboratory in the world has been responsible for so many bacteriological discoveries, largely directly applicable to preventive medicine, as the Pasteur Institute. Among its achievements, besides the well-known anti-rabies vaccine, are the preparation of a vaccine to prevent tuberculosis by Albert Calmette and Alphonse Guerin in 1921, Emile Roux's and Alexandre Yersin's epoch-making work on the diphtheria bacillus, the typhus discoveries of Charles Nicolle of the Pasteur Institute in Tunis, and the syphilis and encephalitis investigations of Constantin Levaditi.

Dr. Louis Martin is head of the entire organization. Three other famous scientists from among those who are quietly carrying on experiments for the benefit of mankind at the Institute are Dr. Ernest François Auguste Fourneau, Prof. Gaston Ramon, and Dr. Harry Plotz, the only American.

Dr. Fourneau is known for his development of stovaine and stovarsol, the names being derived from the English translation of "Fourneau," which is "stove."

Prof. Ramon lives surrounded by 400 horses at the Institute's annex in Garches. He makes quantities of serums against diphtheria, bubonic plague, tetanus and other diseases which are sold all over the world. He is famed as the man who developed diphtheria anti-toxin, and the principle of multiple vaccination, that is, immunization against several diseases with a single vaccination.

Dr. Plotz, who proved that measles is a virus disease, is now working on a measles serum; he recently developed a new modern type of smallpox vaccination.

APPLICATIONS FOR ASSOCIATE MEMBERSHIP, MEMBERSHIP AND FELLOWSHIP IN THE INTERNATIONAL COLLEGE OF SURGEONS MAY BE ADDRESSED TO DR. CHARLES H. ARNOLD, 908 TERMINAL BUILDING, LINCOLN, NEBRASKA. THESE WILL BE ACTED UPON IN THE REGULAR ROUTINE AS OUTLINED IN THE BY-LAWS. APPLICATIONS FOR CONSIDERATION MUST BE RECEIVED NOT LATER THAN A MONTH PRECEDING THE REGULARLY STATED ASSEMBLY MEETING.

SOME OLD AUTHORS AND SOME OLD BOOKS

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PHILADELPHIA

"In the magic pages of books there is found all that mankind has thought, done, gained and been." These words were used by Thomas Carlyle 100 years ago in expressing his opinion of books.

From the exalted opinion expressed by Carlyle, it is easy to understand why man for centuries has been and still is deeply absorbed in writing as well as in studying books. On the other hand, how widely mankind has profited by the study of books is not only beyond comprehension, but is even beyond the imagination of the human mind.

LIBRARIES

As a result of his interest and study, man has created throughout the centuries and in all lands some of the most beneficient and informative of all institutions—the great libraries.

American Libraries. Today there are in America alone more than 10,000 libraries with 1,000 or more volumes on file. Of the great libraries of the world, the Congressional, in Washington, D C., is now claimed to be the largest. It has on file over 8,000,000 printed books, maps, prints and other volumes. The development of the college library in America is positively amazing. The first college library was established at Harvard College with 330 volumes 300 years ago. This library, the largest university library in America, now has 3,945,318 volumes. The number of books in American colleges now totals 62,858,078.

Early Egyptian Library. Of the famous libraries of antiquity, the most renowned was the Alexandrian, developed by Ptolemy the Second, or Ptolemy Philadelphius, about 260 B. C. In it there were on file more than 700,000 "Rolls." At its height it was the single repository of the culture of the ancient world. It is believed that pagan civilization could be almost completely reconstructed, if the records of this institution were available today. The library existed for almost a thousand years. Its destruction in 640 A.D. is regarded as one of the great tragedies of history. The hundreds of thousands of rolls on file were distributed as fuel over a period of six months to the public baths of the city.

Early Medical Library. Geographically, it might be of interest to mention that only a short distance from Alexandria, along the Ionian Coast of Asia Minor, a small peninsula juts out into the Aegean Sea. In the pre-Christian era there was located on this peninsula a celebrated university with a medical school of wide reputation. In this famous institution there was established a library with a section devoted exclusively to books dealing with medicine. This, probably, may be regarded as one of the earliest medical school libraries.

From a study of ancient history, it becomes at once apparent, I think, that the Ionian Coast of Asia Minor with some of the small islands in the Aegean Sea close by was really the birth place of the science and art of medicine.

COLLECTING MEDICAL BOOKS

From records available, it is evident that there always has been a widespread interest in the collection of books, and this is probably greater today than ever before.

Many years ago I began, in a small way, the collection of old medical books In a comparatively short time I managed to gather a few hundred volumes. Ne all of these I presented to our

Case Report (Smith). A woman, 83 years of age, had repeated attacks of gall stone colic for a period of five years. She died with symptoms of acute intestinal obstruction, following an illness of three days' duration.

At necropsy 150 cc. of dark green bile were found in the peritoneal cavity. Streptococci were cultured from the exudate. The liver appeared small (1,100 Gm.) and was covered by a thin capsule. On the anterior surface, 7 mm. from the gall bladder fossa, a depressed area with a thickened capsule was noted. A small, green-stained papilla with a minute central opening revealed the place of rupture of a dilated subcapsular duct. The ampulla of Vater bulged for 3 cm. into the lumen of the duodenum which contained milky fluid. A stone occluded the ampulla and smaller stones were felt above it. The common duct measured 1.2 cm. in diameter. The wall was less than 1 mm. thick. Just below the entrance of the cystic duct, which was tortuous, a stone was found. The gall bladder was moderately dilated and embedded in fibrin. The wall was not greatly thickened.

The gall bladder contained one large and several smaller concretions of bile. The main branches of the hepatic duct were dilated and contained numerous small gall stones. One duct led to the depressed area mentioned above in the region of the ruptured subcapsular duct on the anterior surface of the liver. This depressed zone showed a layer of whitish fibrous tissue for a depth of 2 mm. The line of demarcation from the liver substance was sharp. The bile ducts, dilated to 1 mm. in diameter and recognized by their dark green stain, formed a plexus which communicated with the dilated branch of the hepatic duct already mentioned. On microscopic examination the central areas of the liver showed chronic cholangitis with marked increase in connective tissue; an acute inflammation predominated toward the surface. Leukocytes and masses of bacteria were noted in the lumen of the bile ducts, but no actual abscess was found. In the area of the ruptured bile duct, the wall separating the duct from the surface was edematous, necrotic, and partly bile stained. Laterally and toward the liver substance, the wall showed numerous polymorphonuclear cells and lymphocytes. The connective tissue separating this duct from the liver tissue contained many large and small bile ducts.

Summing up, this observation shows dilatation of a group of intrahepatic ducts resulting from intermittent obstruction of these ducts by calculi. An acute exacerbation of chronic cholangitis resulted in rupture of the dilated obstructed ducts in their subserous portion on the liver surface, with escape of infectious bile into the abdominal cavity.

Two observations of Nauwerk pertaining to the same type of bile peritonitis are of particular interest and may be herewith reviewed.

Case 1 (Nauwerk). The patient, a woman 49 years of age, died of acute diffuse peritonitis. At necropsy 500 cc. of yellow brownish bile containing colon bacilli and Streptococci were obtained from the peritoneal cavity. On the liver surface near the juncture of the round and falciform ligaments, a slit-like opening was noted. The edges of this rent were bile stained and on compression of the gall bladder, bile escaped through this fissure. A stone occluded the common duct. The left hepatic duct and its branches were greatly dilated and showed chronic cholangitis. The small branches were irregularly dilated; the dilatation extended to the liver surface where thin-walled cysts, one of which had ruptured, were present.

Case 2 (Nauwerk). The patient was a woman, 69 years old, who died of general peritonitis. At necropsy 500 cc. of brownish fluid were obtained, the culture of which revealed colon bacilli. The liver was enlarged, but the lateral and posterior portions of the left lobe were atrophic. In the vicinity of the falciform ligament, white dilated tortuous subserous ducts, with thin and fibrous walls, bulged over the surrounding tissue. Near the posterior border of the liver one of these dilated ducts showed a perforation the size of a pin point and had bile stained edges. On compression of the liver, turbid bile escaped through this narrow opening. Sections through the left lobe of the liver revealed numerous stones obstructing the intrahepatic ducts at several places. The common duct was also occluded by a stone impacted in the ampulla.

In 1909, Karrillon reported another interesting observation from Nauwerk's laboratory. A man, 66 years of age, died three days after a laparotomy had been performed for diffuse fibrinous peritonitis. At necropsy the common duct was found greatly dilated and occluded by a stone. At the edge of the left lobe of the liver several cystic dilated subserous bile ducts were noted, one of which had

Library of the New York Historical Society.

"The Papyrus Ebers" was written, it is believed, about 1600 B.C., and covers Egyptian medicine for the preceding 1500 years.

Galen. In studying the shore line of the Aegean Sea, it is interesting to observe that only a short distance north of Cnidus was located the City of Ephesus. In the second century A.D., about the year 130, there was born in the City of Pergamus, a few miles north of Ephesus and near the ancient city of Troy, a baby who became the dominating figure in world medicine for nearly 1500 years, Galen Claudius.

Galen was one of the most voluminous writers of the ancient world. He composed, it is stated, more than 500 treatises on various topics, including not only medicine, but grammar, logic and ethics. He was a strong advocate of a high ethical standard, but a weakling in its practice. Even after a lapse of 1800 years this is a human frailty occasionally observed today. For instance, while residing in Rome during the reign of Marcus Aurelius in 168 A.D., Galen proclaimed himself, because of his learning and more especially because of his success as a physician, a "Paradoxologus" (wonder speaker) and a "Paradoxopoeus" (wonder worker). Naturally, because of this egotistical attitude he incurred the bitter enmity of his fellow practitioners.

Soranus. It was also in the second century A.D. that a noted Ephesian, Soranus, compiled one of the greatest works on obstetrics, gynecology and pediatrics. This was the standard work on these subjects, especially obstetrics and gynecology, for more than 1400 years. He also composed the earliest biography of Hippocrates.

FRENCH AND ITALIAN SCHOOLS

Paré. Although there were published plagiarized volumes of Soranus, both with respect to text and illustrations, notably one in German by Eucharius Rósslin, of Worms, in 1513, called the "Rosegarten," written especially for midwives, and another by Thomas Raynalde, of England, written in 1545, entitled the "Byrthe of Mankynde," there was nothing of real obstetric merit presented until the publication, in 1850, of the work of the famous French army surgeon, *Ambroise Paré* (1510-1590).

Paré, acting, no doubt, on the suggestion of Soranus, revived the operation of podalic version. It was Paré, also, who restored the ligature and published essays of a practical nature on various aspects of surgery. His greatest work, of course, was his textbook on Surgery, presented in 1564. It was Paré, Garrison has said, "who made amputation modern by reintroducing the ligation of blood vessels."

Vesalius. Contemporary with Paré in Paris, a young man was studying in the University of Padua, Italy. He was born of German parentage in Brussels, Belgium, and received his early education in the University of Louvain. This young man, who was destined to become the greatest figure in the world of medicine "after Galen and before Harvey," was *Andreas Vesalius* (1514-1564).

Previously, for more than 1400 years, Galen was the dominant personality of all phases of medicine, including anatomy, but with the publication in 1543 of the "Fabrica Humani Corporis," by Vesalius, there was given to the world anatomy, as expressed by Garrison, "in the form of a living, working science."

A copy of the "Fabrica," illustrated by Jan Kalkar, a pupil of Titian, is one of the treasures of our college library.

Shortly after the publication of this great work, Vesalius was succeeded as head of the Department of Anatomy, in Padua, by an authority almost equally as eminent, Gabriele Fallop [illegible] 1562).

attachment to the liver. The authors assumed rupture of the distended gallbladder had been caused by mechanical force.

Sick and Fränkel observed a man, 32 years of age, who, while carrying a heavy bag up two flights of stairs, felt a sudden pain. Death followed. At autopsy a large amount of sterile bile was present in the peritoneal cavity. The gall bladder showed a pin point opening with edema of the muscular layer but absence of any inflammatory reaction in the wall. The authors assumed this perforation to be of a traumatic nature.

When making a postmorten examination of a man, 53 years old, Askanazy found in the peritoneal cavity a bile stained fluid mixed with fibrinopurulent exudate. At the neck of the gall bladder a distended duct of Luschka was occluded by numerous small calculi. Necrosis of the thinned wall had resulted in an escape of bile which was infected with colon bacilli.

At the exploratory laparotomy of a boy, 6 years of age, Risel found a large amount of sterile bile in the peritoneal cavity. The gall bladder was partly covered with fibrin. Microscopically a circumscribed necrosis of the wall was demonstrable.

Wagner found bile stained fluid in the peritoneal cavity of a man, 48 years old. The extrahepatic ducts were dilated and contained turbid bile. The gall bladder was covered with fibrin and contained numerous stones. On microscopic examination the gall bladder wall showed a small circumscribed area of necrosis.

At the exploratory laparotomy of a woman, 62 years old, Louros found 1500 cc. of bile in the abdominal cavity. Bile was dribbling from the gall bladder. At its neck the extirpated gall bladder showed an ulcer which extended into the muscularis. Microscopically a circumscribed necrosis of the whole wall was found, and two fissures passed in an oblique direction through this area of necrosis.

Several similar observations are not included in the above survey because the rupture in the gall bladder which was suspected at operation was not demonstrable. Concern for the patient restricted the time for the examination during operation in the cases of Schievelbein, Wolff, Madlener, Leriche, Finsterer, and Sölling, in two cases of Doberauer and in five of Hugel. In all these observations, the point of perforation was not found. Burkhardt, Clairmont, Riedel, and Johansson encountered similar difficulties in their observations.

COMMENT

Out of the whole group of bile peritonitis cases, a relatively small number in which the escape of bile occurs from a ruptured subserous bile duct on the liver surface or through the gall bladder wall deserves special attention. The biliary character of the exudate is striking, contrary to many observations in which an abscess of the gall bladder or of the common duct breaks into the peritoneal cavity and produces a purulent perforative peritonitis. In the cases under discussion only very careful anatomical studies enabled the reporters to find the point of rupture. Many observers, not finding a microscopic perforation, assumed that the intact gall bladder wall was permeable for bile.

Clairmont and von Haberer, in 1910, put forth this explanation and were supported by Wolff and König. They based their statements on clinical observations and examination at operation. The opponents (Nauwerk, Louros, Askanazy, Smith), confirmed their view by thorough gross and microscopic studies of specimens obtained at necropsy. The point of escape for the bile, usually being minute, is often ascertained only by serial sections through the area of suspected rupture.

From the study of the above cases of ruptured subserous ducts, one fact stands out: Dilatation could be traced from the point of rupture on the surface of the

Avicenna was, moreover, a poet of distinction, writing quatrains in the style of the great Persian poet, Omar Khayyám, famous for his "Rubáiyát."

The 1593 edition of Avicenna in Arabic, the rarest of all editions of this great work, is also in my collection. In this there is found among many other things of importance a description of diabetes and the sweetish taste of diabetic urine.

I think it is of some importance to know that in 1395 the works of Rhazes and Avicenna composed, with seven others, the entire library of the medical faculty of Paris.

Other Arabians. There were besides Rhazes and Avicenna many other physicians of Arabian origin, including *Haly ben Abbas* and *Avenzoar* of Seville; and *Moses Maimonides, Averroes* and the noted surgeon, *Albucasis,* all of Cordova.

SOME ENGLISH PHYSICIANS

Thus far I have devoted my remarks to only a few old authors and a few old books. The names of those mentioned are immortal. Forever they will remain as luminous characters in medical history. They have thrown "the torch" and of all the ancient writers it is to them, more than any other, we owe our heritage.

Teachers of Early Americans. May I now refer to a period of special historical interest to medicine in Philadelphia, the period from 1750 to 1800. During this time there flourished in England a number of physicians of world-wide distinction. These were the medical mentors of the youth of Colonial America and, especially, the youth of our Philadelphia. Included among their students from Philadelphia were William Shippen, Jr. (1736-1808) and John Morgan (1735-89), the first *professors* of anatomy, surgery, obstetrics and medicine in our country; and founders, in 1765, of the Medical School of the University of Pennsylvania.

The group of English physicians I have in mind were generously helpful to the students in this country, even though at the time there was looming on the horizon a foreboding discontent. Comprising the group were men of varied temperament and character, though they were all most hospitable and charitable.

I should like to refer to four and it is to these chiefly that Colonial America owed its medical creation. The most renowned members of this little group were the *Hunters, William* (1718-83) and *John* (1728-93). The first was famous for his surpassing anatomical knowledge, and among many other things for his classical work on the "Anatomy of the Pregnant Uterus."

The second I include in this distinguished coterie, first, because of his devotion to natural history, second, because of his contribution to surgical pathology and surgery in general, third, because of his founding of the great Hunterian Museum in the Royal Society of Surgery, London, and fourth, because of the encouragement he gave to Edward Jenner in his studies which ultimately led to the discovery of vaccination.

Jenner on one occasion in a letter to John Hunter stated that he was thinking over the problem of vaccination very seriously. Hunter replied, "Don't think, act."

Another member of the group was the noted Quaker physician, *John Fothergill* (1712-80), (not Fathergill). He was an intimate of Benjamin Franklin and a devoted friend of the little Quaker Colony in Philadelphia.

It was Fothergill who presented to the Pennsylvania Hospital some of its most treasured possessions, the collection of anatomic and obstetric charts and casts. These were the first

teaching purposes in our

ture of a dilated subserous bile duct or of the gall bladder.

The rupture of a subserous bile duct is the end result of intermittent or continuous partial occlusion of an intrahepatic duct by calculi with concomitant chronic cholangitis. A neoplastic growth may have the same effect. In all these instances an additional obstruction is found in the common duct. This may easily distract the attention from the main etiologic factor mentioned above as responsible for the dilatation of the smaller bile ducts up to the surface of the liver.

Rupture of the gall bladder occurs either in the fundus region near its attachment to the liver or in the neck region. In the second instance, a ruptured diverticulum of Luschka must be thought of as a causative factor. Chronic cholecystitis with an acute exacerbation is responsible for the circumscribed necrosis which leads to perforation.

Rupture of an extrahepatic bile duct is always the result of a pressure necrosis due to an impacted gall stone in the presence of an acute phlegmonous cholangitis.

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physician, "Religio Medici," published about 1635.

May I quote a few short sentences from the "Religio." Could any passages be more lofty, more beautiful?

> a. At my devotion I love to use the civility of my knees.
>
> b. At the sight of a cross or a crucifix I can dispense with my hat, but scarce with the thought or memory of my Saviour.
>
> c. There are two books from whence I collect my divinity: Besides that written one of God, another of His Servant, Nature, that universal and public manuscript, that lies expansed to the eyes of all

"Religio Medici," as you probably know, was a very beloved member of the bedside library of the late Sir William Osler, and it has been of mine for more than thirty years. Doctor Osler's little volume accompanied him in death and to his grave.

Sir Thomas Browne died at his home in Norwich, in 1682, on his seventy-seventh birthday, with the knowledge that his "Religio" was translated into French, German and other languages.

Brown. The second member of this group, *John Brown* (1810-1882), hailed from the highlands of Scotland. We shall forever be indebted to him for his two little volumes, "Spare Hours." In these there are found that interesting contribution everyone should read, entitled: "With Brains, Sir."

In "Spare Hours" there is, besides, the great essay on John Locke and Thomas Sydenham, "the one the founder of our analytical philosophy of mind and the other of our practical medicine."

In "Spare Hours" is, also, the immortal story of "Rab and His Friends." In this there is portrayed not only one of the most impressive clinical descriptions of cancer of the breast, but, also, one of the most pathetic tales in all literature.

John Brown graduated in medicine at the University of Edinburgh, in 1833. He was a born writer and was always emphatic in teaching that "an author should publish nothing unless he had something to say and is sure to say it aright."

It is altogether likely that "Rab and His Friends" was written when John Brown was still a student clerk in the Minto House Hospital, Edinburgh. It was here the patient whom he tenderly describes as Ailie Noble came under his care. In examining the patient he records: "What could I say? There it was, that had *once* been so soft, so shapely, so white, so gracious and bountiful, so 'full of all blessed conditions,' hard as a stone, a centre of horrid pain, making that pale face with its gray, lucid, reasonable eyes, and its sweet resolved mouth, express the full measure of suffering overcome."

I have on many occasions heard my beloved teacher and hospital chief, the late Doctor J. Chalmers Da Costa, reverently refer to dear old Doctor John Brown.

Doctor Brown served his apprenticeship under Mr. James Syme, one of the most competent surgeons Scotland ever produced. Syme was the father-in-law of one of the greatest benefactors of mankind, Joseph Lister. Doctor Brown writes that Syme excelled in everything, save penmanship, and even this, he said, had every fine quality, "except legibility."

Goldsmith. I have included the Irish physician not because of any special contribution he made to medicine. There is even some doubt as to whether he ever received a medical degree, but he undoubtedly did spend some time in the study of medicine in the Universities of Edinburgh, Leyden and perhaps Padua.

I refer to him, particularly, because it was Doctor Oliver Goldsmith (1728-1774) who added to our literature "The Good Natured Man," "She Stoops To Conquer," "The Traveller," "The Vicar of Wakefield," and "The Deserted Village," contributions that can never die.

To me he was one of the m[illegible]ble yet one of the most patheti[illegible]

resultar por la rotura de un conducto biliar subseroso dilatado ó de la vesícula biliar.

La rotura del conducto biliar subseroso es el resultado final de la oclusión continua ó intermitente de un conducto intrahepático por un calculo con colangitis cronica concomitante. Un crecimiento neoplasico puede tener los mismos resultados. En todas éstas condicines una obstrución adicional es encontrada en el conducto común. Esto puede facilmente detractar la atención del factor etiológico principal mencionado arriba como responsable por la dilatación de los conductos biliares mas pequeños extendidos hasta la superficie del hígado.

Rotura de la vesícula biliar ocurre en la region del fondo proximo á la inserción del hígado ó en la region del cuello. En el caso segundo, una rotura del diverticulum de Luschka debe de pensarse como el factor causante. Una colecistitis crónica con una exacerbación aguda es responsable por la necrosis circunscrita que la lleva á la perforación.

Rotura de un conducto biliar extrahepatico es siempre el resultado de necrosis por presión debido á una piedra infartada en la presencia de una colangitis flemonosa aguda.

RIASSUNTO

L'Etiologia della peritonite biliare

La fuoriscita di bile nella cavità peritoneale può risultare o dalla rottura di un dotto biliare subseroso, dilatato, or della cistifillea.

La rottura del dotto biliare subseroso è il risultato finale di una occlusione intermittente o continua del dotto intraepatico, per calcolo, con concomitante colangite cronica. Un neoplasma può avere lo stesso effetto. In tutte queste circostanze, un' obstruzione del dotto comune è presente e ciò può distracci dal sopramenzionato e primario fattore etiologico, come responsible per la dilatazione dei picoli dotti biliari alla superfice del fegato.

La rottura della cistifillea può avvenire o nella regione del fondo, o in quella del collo. In quest' ultimo caso, la rottura del diverticolo di Luschka può essere considerato come il fattore causale.

Una colecistite cronica con esacerbazione acute è responsabile per la necrosi circoscritto che tende alla perforazione.

La rottura del dotto biliare extraepatico è sempre il risultato di una necrosi da pressione, dovuta a un calcolo, in presenza di una colangite acuta flemmonosa.

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THE ARRANGEMENT COMMITTEE

RÉSUME

Quelques anciens auteurs et quelques anciens livres

Il est presenté des détails sur quelques médecins de renom qui furent écrivains, laiques ou scientifiques. Les faits recueilles nous montrent les heureux résultats d'avoir collectionné d'anciens livres de médecine. Cette collection renferme un total d'environ deux mille volumes.

ZUSAMMENFASSUNG

Einige alte Verfasser und einige alte Bücher

Einzelheiten über hervorragende Aerzte die Schriftsteller gewesen sind, sowohl auf allgemeinem wie auch auf medezinischen Gebiet, wurden dargeboten. Die berichteten Tatsachen sind die wertvollen Ergebnisse der Gewohnheit alte medezinische Bücher zu sammeln. Diese Sammlung umfasst nun ungefähr 2,000 Bände.

SUMARIO

Algunos Autores Viejos y Algunos Libros Viejos

Detalles con referencias á algunos médicos prominentes que han sido escritores, ambos lego y profecional, son presentado. La verdad colectada es el producto obtenido en la mania de colectar libros viejos, ésta coleción hace un total como de 2,000 volumenes en la actualidad.

RIASSUNTO

Vecchi autori e vecchi libri

L'autore ci presenta medici prominenti, che furono scrittori, sia laici o scintifici. I particolari raccolti sono il felice risultato di una collezzione di più di due mila vecchi libri di medicina.

* * *

Publication of the Royal Microscopical Society's journal will be continued, although the celebration of the centenary of the society was cancelled. It has been announced that it may be necessary for the time being to curtail the number of ordinary meetings normally held in London during the session.

* * *

Dr. Owen H. Wangensteen, professor and head of the department of surgery at the University of Minnesota Hospitals, has received a grant from the Committee on Scientific Research of the American Medical Association for a study of the physiologic rationale of operations performed for the relief of duodenal and gastric ulcer.

Dr. George R. Minot, professor of medicine at the Harvard Medical School, was presented with the Gordon Wilson Medal of the American Clinical and Climatological Association at the meeting on October 10 at Saranac Lake, N. Y He gave the Gordon Wilson Lecture before the association on that occasion.

* * *

Dr. Oswald Swinney Lowsley, of New York, has been made an officer of L'Ordre Nationale de Honneur et Mérite by President Vincent of the Republic of Haiti. Dr. Swinney was honored for his distinguished services to the Haitian medical profession in instructing them in urological surgery. He has also been made an honorary professor in the Faculte de Medicine.

INQUIRIES ABOUT PAPERS FOR THE ASSEMBLY, ETC., SHOULD BE ADDRESSED TO DR. CHARLES H. ARNOLD, SECRETARY OF THE SCIENTIFIC ASSEMBLY, 908 TERMINAL BUILDING, LINCOLN, NEBRASKA.

library*, and there were, among the number, two volumes which I considered almost priceless. These were textbooks on anatomy. One was compiled by Nathaniel Highmore (1613-1684), the celebrated English anatomist of Antrum of Highmore fame, in 1651, and the other, in 1627, by the noted Dutch anatomist, Adrian van Spieghel or Spigelius (1578-1625), whose name is associated with the Spigelian lobe of the liver.

My interest in "collecting" was revived about 15 years ago, and I now have on file more than 2,000 volumes, combining, probably, one of the most complete private collections of works on obstetrics and gynecology in this section of our country.

Historical sketches of some of the outstanding physicians with whose biographies I have become acquainted in the pursuit of this hobby are herein presented.

OLDEST MEDICAL WRITERS

Hippocrates. A short distance off the coast of the Cnidian Peninsula is the little Island of Cos. This is about the size of the Isle of Wight in the English Channel. It is about 95 square miles in area, corresponding to the size of Washington, D. C. Here there occurred one of the most important incidents in all medical history, the birth of *Hippocrates*. Incidentally, it was here, also, that Ptolemy Philadelphius was born in 311 B.C.

The birth of Hippocrates took place in 460 B.C., only a few short years after some of the most momentous episodes in ancient history, including the decisive defeat of Darius on the Plain of Marathon (490 B.C.). It was also only ten years after the Persians were completely destroyed in the naval battle of Salamis (480 B.C.).

This period was noted as the Golden Age of Greece. It was the age of Sophocles, Aeschylus, Pericles, Herodotus, Plato, Socrates, Phidias and a host of others.

Hippocrates received his preliminary education (I suppose one should designate it premedical education) at Selymbria, near the present site of Constantinople (Istanbul) and his medical education in the School at Cnidus.

Of the medical works of antiquity, those of Hippocrates are probably not only the best, but the most widely known. His little book of "Aphorisms" is one of the great classics of all literature, and the first sentence takes first rank with those most frequently quoted today, namely: "Life is short, art long, occasion fugitive, experience delusive and judgment difficult." Like Galen, living 600 years later, Hippocrates was one of the most prolific writers of the pre-Christian era.

In his medical works there is found for the first time a description of the methods employed in collecting clinical records, as well as the technic of bedside study (I was almost tempted to say "the bedside manner"). Hippocrates may be regarded and, indeed, is not infrequently referred to as the Sydenham of ancient medicine. The works of Hippocrates cover almost every conceivable aspect of medicine and surgery. In some respects his methods of study and treatment compare favorably with those practised today.

Papyrus Ebers. However, the oldest, largest, most complete and most perfect medical book extant which antedates Hippocrates by more than 1,200 years, is "The Papyrus Ebers." This "book" was found with the "Edward Smith Papyrus" in a metallic case between the thighs of a mummy near Thebes and was obtained in 1872 by the noted German Egyptologist, George Ebers. It is now one of the most precious treasures of the University of Leipzig, Germany. The Edward Smith Papyrus is in the padded with felt before this last strip is applied. The method of application of these strips is illustrated in Figure 1

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* Jefferson Medical College of Philadelphia.

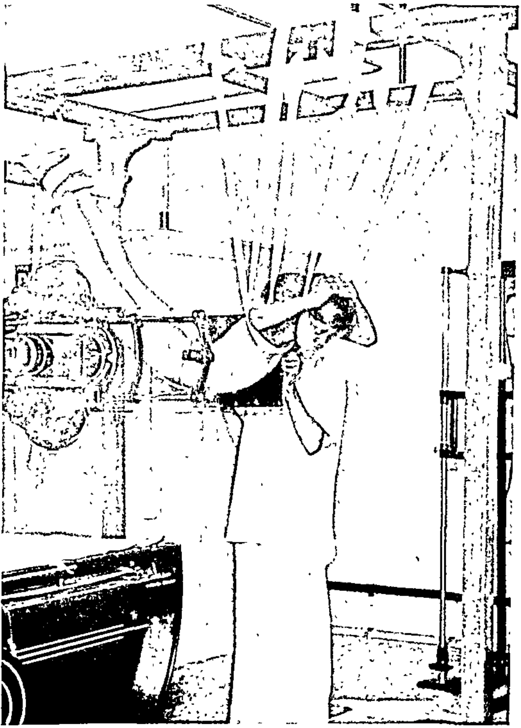

Fig. 1. Patient suspended after local anesthesia has been applied to the injured area. Lateral x-ray film is being taken to see whether reduction is satisfactory.

The affected vertebrae having been infiltrated with local anaesthesia, the patient is suspended as illustrated in Figure 1, and a lateral roentgenogram is taken. As it is not possible to use a "bucky", the resulting film does not show great detail, but it is sufficient to show whether reduction has taken place.

In the case of lumbar vertebrae, failure to obtain reduction is almost certainly due to the superior articular process of one vertebra having become dislocated onto the dorsal aspect of the inferior articular process of the vertebra proximal to it. As explained by Böhler, it is not possible to effect reduction of this dislocation without open operation. This should be done immediately. The patient should then be resuspended for another x-ray photograph.

When it has been ascertained that reduction has been satisfactorily effected, the patient is sewed into a stockinet vest and a plaster jacket is applied (Fig. 2). The plaster jacket must be

FAMOUS ENGLISH WRITER

Thirty-five years after the appearance of the work of Vesalius, there was born on the Kentish Coast of England, at Folkstone, a baby boy who 197 years prior to the foundation of the Jefferson Medical College gave to the world the first description of the circulation of the blood (1628). This made *William Harvey* (1578-1657) the most distinguished physician of the seventeeth century and probably the greatest English physician in all history.

Harvey's discovery was regarded as the most momentous contribution to medicine since the time of Galen, 1500 years before. William Harvey died in 1657, at the age of seventy-nine, twenty-nine years after the publication of his discovery.

Harvey was not only devoted to medical science, but he was, likewise, always deeply interested in the welfare of his neighbors, especially the poor of his native town, and to these he generously bequeathed a large part of his estate, typifying the ideal gentleman of old England. Here it might be of interest to mention, also, that in 1628, William Harvey delivered the Lumleian Lecture at the annual meeting of the Royal College of Physicians, in London. Two hundred and ninety-six years later (April 3, 1924), this lecture was delivered by the late and universally beloved head of the Department of Medicine in our Institution, Doctor Thomas McCrae.

ARABIAN AND TURKISH WRITERS

Before continuing my remarks in a chronological way, may I beg your indulgence while I refer briefly to two noted authors of the tenth and eleventh centuries, one an Arab, the other a Turk.

Rhazes. The first, *Rhazes* (860-932), was the directing head, though not the founder, as is sometimes claimed, of the celebrated hospital in the City of Bagdad, once the greatest, largest and richest city in the old world, the city of "Sindbad the Sailor," "Aladdin and The Wonderful Lamp," "Ali Baba and the Forty Thieves" and the other "Thousand and One Arabian Nights."

As a clinical portrayer of disease, Rhazes is said to rank with Hippocrates and Sydenham. His description of smallpox and measles, the first authentic account of these diseases, will forever be included among the classics of medicine.

The clinical portrait he drew of smallpox and measles is so clear and complete as to resemble a description of these disorders as found in the modern textbooks of today. Rhazes also compiled an encyclopedia of medicine, called "El Hawi" or "Continens." This is a large work of 546 two column pages, measuring eighteen inches in length and twelve inches in width.

A Latin edition of this book, which I am fortunate enough to possess, is a masterpiece of typographical art and was printed in Venice in 1506. It was rebacked with a copy of the original binding some time in the eighteenth century. The preface states, "The work covers the whole science and art of medicine in twenty-five books."

Avicenna. Rhazes was succeeded many years later (about 100) in Bagdad by the "Prince of Physicians," *Avicenna* or, in Turkish, *Ibni Sina.* He was born in Buhara in 980 A.D., of Turkish and not Persian parentage, as formerly taught. A study recently conducted by the University of Istanbul would seem to prove conclusively the Turkish origin of this outstanding figure in medical history.

Avicenna was noted not only for his encyclopedic contribution to medicine, his "Canon," a huge volume of 610 pages, but, also, for his contributions to numerous other topics, more than 100 in all. He has even been called the "Father of Geology," because of his remarkable description of the origin of mountains.

ZUSAMMENFASSUNG

Die Behandlung der Brust und Lendenwirbelfrakturen

Es wird eine Methode für Korrektur der Verschiebungen der Wirbelknochen angegeben. Es ist eine Kombination der Methode einen starken Zug an den Beinen in gesenkter Lage anzubringen und der Methode die obere Körperhälfte aufzurichten, um auf diese Weise eine Überstreckung der Wirbelsäul zu erreichen.

SUMARIO

Tratamiento de las Fracturas de las Vertebras Toraxicas y Lumbares

Un método para reducción del desplazamiento de los huesos de las vertebras es descrito. Este es una combinación del método de aplicar tracciones fuertes de las piernas en la posición de pronación y de el método de levantar la mitad superior del cuerpo con el objeto de producir hiperextención de la espina dorsal.

RIASSUNTO

Trattamento delle fratture delle vertebre toraciche e lombari

Viene discritto un metodo di riduzione del dislocamento delle ossa vertebrali. Questo è una combinazione del metodo di applicare trazione forte sulle gambe in posizione prona, e quello di sollevare la metà superiore del corpo, da produrre una iperestensione della spina.

Awarded Keys

Four physicians were awarded gold keys in recognition of distinguished accomplishments in physical therapy at the meeting of the American Congress of Physical Therapy held in New York City on September 6. Awards were made to **Dr. Edward C. Titus,** of New York, for his research in electrotherapy and light therapy; **Dr. A. Bern Hirsh,** of New York, for his organization of physical therapy departments in hospitals and clinics; to **Dr. Joseph Riviere,** of Paris, for the introduction of electro-surgery into medical practice; and to **Dr. James B. Mennell,** of London, for contributions to physical medicine, particularly in massage. The presentation was made by **Dr. William Schmidt,** prseident of the congress.

Dr. William Combe Wilson has been appointed to the regius chair of surgery in the University of Aberdeen made vacant by the appointment of Professor James R. Learmonth to the chair of surgery in the University of Edinburgh.

Sir Frederick Banting, professor of medical research at the University of Toronto, has enlisted as captain in the fifteenth General Hospital of the Canadian Army Medical Corps.

Charles F. W. Illingworth, M.D., F.R.C.S., has succeeded **Prof. Archibald Young** as Regius Professor of Surgery in the University of Glasgow. Prof. Young's term of office ended September 30.

THE NATIONAL ASSEMBLY OF THE UNITED STATES CHAPTER OF THE INTERNATIONAL COLLEGE OF SURGEONS WILL BE HELD FEBRUARY 11 TO 14, 1940, AT VENICE, FLORIDA, UNDER THE DIRECTION O INTERNATIONAL PRESIDENT-ELECT DR. FRED H. ALBEE AND RESIDENCY OF DR. FREDERICK M. DOUGLASS.

which involved the entire small intestine; there were 22 males and 12 females. Leonard, reporting 22 cases of volvulus at the Newton Hospital in 10 years, had 13 males and 9 females. Pizzagalli reports cases in 3 males and one female. In Weible's series of 64 cases, there were 51 males and 13 females. Isaacs, from St. Bartholomew's Hospital, records 16 males and 9 females.

AGE

Volvulus, although quite generally attributed to congenital defects, is definitely associated with adult life. Lawson gives the average age as 45 years. Isaac's series gave only two cases in patients under 20 years of age; 12 were between 20 and 50 years; 10 between 50 and 70, and one over 70. However, single cases of volvulus of the newborn have been reported (Trillat and Boulez, Tissier and Mercier, Metzger, Dott, Gonnet and Desjacques, Oberling, Spencer, Anderson, and Pitt). Trillat and Boulez believe that cases in the newborn may be more frequent than their diagnosis or verification would indicate. When a newborn of apparently normal constitution dies without affording satisfactory clinical justification, intestinal occlusions are very frequently found — invaginations, diaphragmatic hernias, and volvulus. Volvulus leads in such occlusions, according to the statistics of Ecoffet (20 per cent).

EMBRYOLOGY AND ETIOLOGY

Borow and Borow say that, when one considers the embryology of the alimentary canal, one is surprised that anomalies of intestinal rotation are not more common, and they, like Trillat and Boulez, believe that such cases occur more frequently than recorded, owing to the absence of symptoms.

Normal embryology of the alimentary canal is described and illustrated by Dott. While true malposition of the foregut and hindgut is comparatively rare, 45 records of gross developmental errors in the disposition of the midgut were found by him in a brief review of the literature. Congenital factors frequently noted are: a long or relaxed mesentery, short attachment of the mesentery root, shortening of the vertical attachment to the posterior abdominal wall, insufficient fixation of the intestine, nonrotation of the common mesentery and of the large and small intestine during embryological development, and an unusually long small intestine (Wechsberg).* Cases in the newborn, in infants, and in young people are commonly associated with malformations of the mesentery or of the intestine (Dott, Poynton, Kredel, Dacker, Donati, Boheme, Eschbach, Hertig, Leischner, Morimoto, Pescatore, Phelip, Poulsen, Travinski and others), the greatest number being, it would seem, due to a common mesentery (Azbukin, Beerger, Dietricj, Billington, Danielson, Helmsmüller, Steinke, Tagehansen, Kirchenberger, Küttner, Leichtenstern, Perez-Fontana, Vigi, and others). The volvulus in these cases with common mesentery involve more or less extensively the small intestine, cecum, and not rarely the ascending and even the transverse portions of the colon.

Acquired structural changes are also discussed in the etiology of volvulus, more especially in the adult. Frequently such changes are associated with previous operations or inflammatory adhesions or bands following appendicitis or peritonitis from any cause. The presence of a cyst or tumor may change the weights and balances of the mechanical arrangements within the abdomen. Abdominal contusions are also found among the cases reported. However, Luke says that congenital causes were responsible for all cases that he collected of volvulus of the entire small intestine. Interesting in this connection is the case reported by Fletcher in which volvulus in all literature. In his youth he was strictly a "play boy," heedless of opportunity and spending most of his early life on the Continent as a flute player, an itinerant musician.

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*For a bibliography on congenital anomalies of the intestine see Dott.

Although his veracity was of a questionable nature, he was, at the same time, most gullible and trusting. In writing his history of Greece, for example, he was almost tricked to include an account of a frightful battle between the armies of Alexander the Great and Montezuma.

It was in the "Traveller," "The Deserted Village" and "The Vicar of Wakefield" that Oliver Goldsmith taught us, as exemplified by his father, dear old Doctor Primrose, how to "learn the luxury of doing good."

It was the Vicar who also said, "I was ever of the opinion that the honest man who married and brought up a large family did more service than he who continued single and only talked of population."

Who among us can ever forget the lines of the Ballad in the "Vicar of Wakefield," reading:

Then, pilgrim, turn, thy cares forego;
All earth-born cares are wrong:
Man wants but little here below,
Nor wants that little long.

To his friend, Sir Joshua Reynolds, he dedicated "The Deserted Village," and "She Stoops To Conquer," to Samuel Johnson. "The Traveller" was dedicated to his brother, Henry.

Oliver Goldsmith was born in Ireland, on November 10, 1728, ninety-seven years before the founding of our medical school. He died, probably from an overdose of an opium preparation prescribed by himself, in London on the fourth of April, 1774, in his forty-sixth year. He was buried in the Temple Church Yard and I have, on a few occasions, stood in reverence at the site which is supposed to mark his last resting place.

Among those who followed his coffin was Edmund Burke, who, as expressed by Pope, was a man "too proud of the right to pursue the expedient," Sir Joshua Reynolds and, no doubt, Doctor Samuel Johnson, with his noted biographer, James Boswell.

Keats. Finally, the last member of this little group, born thirty years before our college was opened and presenting to the world at the age of eighteen some of the sweetest lyrics ever to flow from the pen of man, is *John Keats* (1795-1821).

After studying medicine at St. Thomas' and Guy's Hospitals, he qualified as a physician, it is recorded, at the age of twenty. He died in Rome in 1821 of tuberculosis, probably contracted from his brother, Tom, and is buried in the Protestant Cemetery in that city. His epitaph, written by himself, reads: "Here lies one whose name is writ in water." Thirty-two years ago this month I stood in homage with many other pilgrims beside his grave.

Literature was a part of this youth's birth. It was the main part. Among his intimate friends were Leigh Hunt, of "Abou Ben Adhem" fame and Shelley, world renowned for his masterpiece: "Prometheus Unbound." Keats's first book of poems, published in 1818, was dedicated to Leigh Hunt.

At the age of 23, only three years before his death, John Keats bequeathed to the world "Endymion." The first line of this literary classic is probably more midely known and more frequently quoted than any other in the English language: "A thing of beauty is a joy forever."

SUMMARY

Details concerning some of the outstanding physicians who have become writers, both lay and professional, are presented. The facts recorded are the fruitful product of the hobby of collecting old medical books, this collection now totaling some 2,000 volumes.

Radiologic diagnosis is seldom mentioned and usually the picture which is taken without preparation with barium enema in intestinal occlusion calls attention to stasis situated at a distance from the lesion. Gautier reported a case of volvulus in which "the radioscopic image was characteristic and permitted localization in absolute fashion of the lesion in the small intestine." It was sufficient, he stated, to indicate the necessity of making a median incision. His presentation lacks interest, however, because he was unable to show his findings to his colleagues. In Stalker's case, a roentgenogram of an adult revealed gaseous distention of several loops of small intestine with probable obstruction of the ileum.

TREATMENT

Lacking a more definite diagnosis than intestinal obstruction, or acute surgical abdomen, the indications for immediate laparotomy are none the less urgent. There must be no waiting for evidence of complete obstruction, for distention of the abdominal wall, or any other of the cardinal symptoms. Stalker delayed operation in his patient, an adult, because he believed him to be too ill for surgery. His condition was brought to a maximum degree of improvement by means of blood transfusion, intravenous administration of saline, and continuous duodenal suction and the general measures of conservative management of intestinal obstruction and peritonitis. Operation was then undertaken without further delay. Without operation there can be only a fatal outcome.

Operation is now rather generally limited to simple detorsion and return of the bowel to the abdominal cavity in a position as nearly normal as possible, with the least possible trauma and in the minimum of time. The intestine must be eviscerated and rotated *en masse* and not loop by loop.

In some of the early cases, gastrojejunostomy or some short-circuiting anastomosis was performed, followed by death in a few hours. Such operations as folding or shortening of the mesentery, fixation of the cecum, and similar procedures, have now been completely abandoned. Philipcowicz sutured the mesentery to the posterior abdominal wall after replacement in good position, hoping thus to prevent recurrence. While a history of previous attacks is frequent, postoperative recurrence does not seem to be a danger. Certainly in the newborn and in infants, in a condition of poor operative risk, the prompt completion of the operation with a minimum of handling overrides in importance all other considerations. Resection is necessary if the vitality of the intestine is definitely compromised (Jacques, Droegemueller, and Buchbinder). The appendix is removed when found swollen or inflamed.

PATHOLOGY

Pathology found at operation or at autopsy is that of intestinal obstruction and interference with circulation. The condition of the intestine was satisfactory in the majority of cases.

The rotated bowel is discolored, violet to black, depending upon the amount of circulatory interference; the mesentery is injected, the bowel collapsed below the twist. The colon may appear smaller than the distended small intestine. The stomach may also be markedly dilated, even to twice normal size. In one instance, in an adult, the greatly distended intestine popped out of the abdominal incision and ballooned out in loops like an inflated inner tube of an automobile tire. Spontaneous perforation occurred in a newborn with partial volvulus (Trillat and Boulez). In an adult, manipulation caused rupture of the distented bowel (Stacy).

In most instances, according to Lawson, the twist is through 180 degrees, but may be 90 degrees (even in a fatal case) up to that of Garrow' [illegible] ent who had a twist of three an [illegible] lf time

TREATMENT OF FRACTURES OF THE THORACIC AND LUMBAR VERTEBRAE

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NAGPUR, INDIA

THE treatment of fractures of the thoracic and lumbar vertebrae has been so adequately dealt with by Böhler[1] in his book that there is no advantage to be gained by wasting time and space in recapitulation and readers are advised to study Böhler's book for themselves. I will content myself by indicating in what ways I have departed from the methods which have been so ably described by Böhler.

The method which I employ in the reduction of displacements of the bones of the vertebrae is a combination of the method of applying strong traction to the legs in the prone position, originated by Davies[2], and of the method of raising the upper half of the body in order to produce hyperextension of the spine as described by Watson Jones[3].

TREATMENT OF PARALYSIS

When first seen the patient is thoroughly examined with a view to determining the site of the lesion and the extent, if any, of the paralysis. If extensive paralysis, including retention of urine, is found, a Pezzar's self-retaining catheter is inserted suprapubically by means of a trocar and cannula. Such patients are usually anaesthetic and so local anaesthesia is not called for. I am opposed to the use of an indwelling urethral catheter as advised by Böhler. I have found that a self-retaining suprapubic catheter is more comfortable for the patient and much less likely to give rise to urinary tract infection than an indwelling urethral catheter.

If there is only partial paralysis which includes the bladder, there is no necessity for the self-retaining catheter because it is usual for the paralysis to pass off rapidly if immediate reduction and application of a plaster jacket is carried out. The urine should be drawn off with all aseptic precautions as often as is necessary until the patient commences to pass urine by himself.

In cases of paralysis reduction must be carried out at once. I apply a plaster jacket whether the paralysis is complete or whether it is only partial. The next day, if there is no sign of improvement in the paralysis, I apply skeletal traction to the legs from the tibial tuberosities and place both legs in Braun's splints, as described by Böhler. The plaster jacket is then split down each side from the axilla to the greater trochanter of the femur, thus converting the jacket into an anterior and posterior shell.

In cases without paralysis reduction may be postponed for a day or two, if such a course should be found convenient.

METHOD OF REDUCTION

Anteroposterior and lateral roentgenograms of the spine having been taken, one proceeds to effect reduction of the displacement found. Originally I employed an ordinary Balkan frame. Now, however, I have had constructed a somewhat higher and heavier frame which embodies the same principle. This frame is shown in Figure I. An even better frame could be made of metal tubing with castors to facilitate movement.

In order to suspend the patient, strips of Newar[*] are employed. One strip supports the chin. There is one strip for the right arm and another strip for the left arm. A fourth strip supports the chest by passing under and behind the arms. A fifth strip is used for applying traction to the legs. The ankles should be well sympathetic plexus from strangulation of the small intestine and rapid absorption of toxins. The general condition of the patient and the pathologic condition found at operation are important factors.

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[*] Newar is a webbing-like material, two inches wide, woven of cotton. It is probably not procurable in Western countries and some substitute would be required.

For acute volvulus of the small intestine the mortality for cases in which only the ileum is involved is about 30 per cent lower than for those in which the entire small intestine is involved. For those cases operated after 48 hours the rate is 75 per cent and over. Nino della Mano reports six cases of detorsion with one death. Dott reports a case of prompt recovery after detorsion in a boy of five with chronic volvulus (Rixford's case). A recovery after operation for volvulus in a four-day-old infant is reported by Borow; the twist was reduced by rotation and the abdomen closed without drainage. Postoperative treatment included blood transfusion; clysis of saline solution and 5 per cent dextrose; enemas of milk and molasses; lavage, irrigation and stupes. This patient, according to Borow, was the youngest on record in whom recovery occurred.

CASE REPORT

On May 3, 1938, a boy two years old, apparently in perfect health, was suddenly seized with severe abdominal pain while out for a ride in a go-cart. There had been no unusual food ration. He had had his breakfast at 8 a. m. and the onset of pain was at 10:30 a. m. His nursemaid quickly took him to his home and an internist was called. The child vomited once a few minutes after onset of pain. There were no bowel movements. When the internist arrived, about one hour after the onset, she found the child in shock, the abdomen was very sensitive to touch, and a palpable mass could be felt above the umbilicus. The internist made a rectal examination but no mass could be felt. There was no blood on the examining finger as is usual with intussusception. Rectal temperature was 99° F. A diagnosis of acute intestinal injury due to volvulus, internal hernia, or intussusception was made. I was called in consultation and agreed with the diagnosis made by the internist.

A white blood count was made at the home, which showed 14,000 leucocytes and 90 per cent polymorphonuclears, of which 29 per cent were stab forms.

The child was then taken to the St. Francis Hospital where a pediatrician and another surgeon met us in further consultation. By this time the child showed little shock and seemed to be better.

A barium enema roentgenogram was made and the colon was found to be fairly normal. The report read: "The entire colon is somewhat larger than average normal. There is no evidence of organic abnormality. There is some collection of gas in the small bowel in the right upper quadrant, but it is not marked. Impression: Essentially normal colon; moderate amount of gas in the small bowel in the right upper quadrant."

A second blood count was made at 2:30 which showed 11,800 leucocytes, 83 per cent polymorphonuclears and 11 per cent stab forms.

A palpable mass could still be felt above the umbilicus, but it was not so marked as it was soon after the onset of pain. We still felt that a surgical condition existed, but decided to give intravenous normal salt solution plus 5 per cent dextrose before opening the abdomen. During the time the intravenous solution was being given the child's condition grew worse. The temperature began to rise rapidly and a third blood count at 5 p.m. showed 16,700 leucocytes and 85 per cent polymorphonuclears with 41 per cent stab forms. The red count and hemoglobin were within normal range for all counts. At the time of operation the temperature was 102°.

Operation. The abdomen was opened by the high midline incision about seven hours after onset of pain. Free bloody fluid was found on opening the abdomen. On lifting up the transverse colon and omentum, the small intestines appeared, twisted and massed together, in the upper abdomen. The entire mass of small intestines up to the duodenum was rotated about the mesenteric axis—from left, across in front, to right (Fig. 1)—so that the folds of mesentery were tightly twisted together close to the spine. Some loops of small intestine were greatly distended and discolored. When this mass was untwisted, we found a marked exudate between the folds of mesentery, where they had been pressed together. Many of the lymphatic glands in these folds were as large as small marbles and showed hemorrhagic areas. There were no adhesions in the abdomen to have caused the extensive volvulus of the entire mass of small intestines. It is difficult to explain the mechanism by which it took place.

unpadded except at the anterior superior iliac spine, the anterior portion of the iliac crest, the sacrum and the spinous processes of the damaged vertebra; these areas should be protected by felt. It is essential that the plaster jacket grip the shoulder girdle, both in front and behind, and the pelvic girdle, especially over the sacrum and the symphysis pubis. In my experience, it is difficult to obtain adequate pressure on the symphysis pubis; the surgeon himself must pay particular attention to this spot and must not entrust it to an assistant.

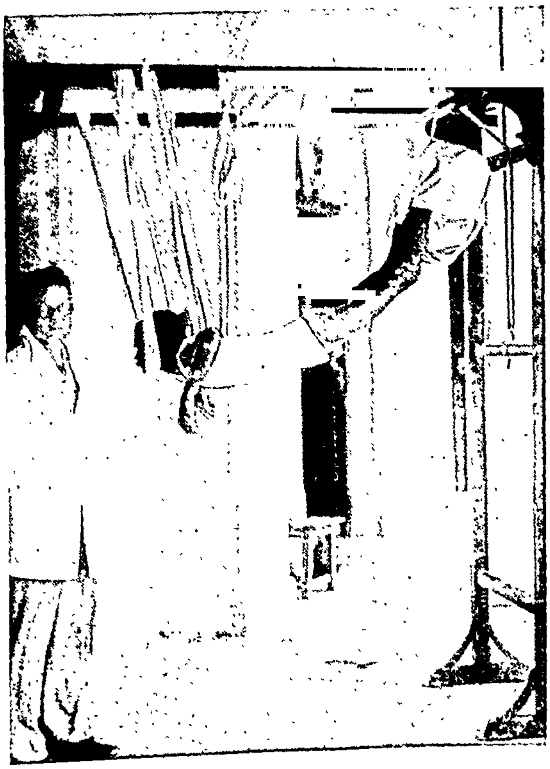

Fig. 2. Plaster jacket applied for fracture of first lumbar vertebra.

In addition to the usual plaster splints made from plaster bandages and utilized for strengthening the plaster jacket, I employ shoulder braces which consist of plaster splints, 2 ft. in length and folded in half longitudinally. These are passed over the shoulder like ordinary trouser braces and are incorporated in the plaster jacket. The patient is then taken down and a window cut out over the abdomen.

If a self-retaining suprapubic catheter has been previously inserted into the bladder, a small hole is now drilled in the plaster jacket about two inches above the symphysis pubis and the distal end of the catheter, which has been strapped along the patient's thigh during the application of the plaster jacket, is now threaded from within outward through the small hole in the plaster jacket. The patient is thus made fairly comfortable.

FRACTURES OF TRANSVERSE PROCESS

Fracture of the transverse process of the lumbar vertebrae is much more common than is supposed and usually passes undiagnosed unless a skiagram is taken of almost every case of severe strain of the muscles of the back. A typical cause of this type of injury occurs when a person seated in the rear seat of a motor car is suddenly flung forward. I find the most satisfactory treatment in these injuries is to supply adequate splintage, utilizing strips of zinc oxide strapping. Pain disappears immediately and the patient is then able to do light work.

SUMMARY

A method for reduction of displacements of the bones of the vertebrae is described. This is a combination of the method of applying strong traction to the legs in the prone position and of the method of raising the upper half of the body in order to produce hyperextension of the spine.

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RÉSUMÉ

Traitement des fractures des vertèbres, thoraciques et lombaires

L'auteur décrit une méthode pour la réduction des déplacements des os de la colonne vertébrale. La méthode combine une forte traction appliquée aux jambes (le sujet étant couché sur le ventre) à l'élevation de la moitie supérieure du corps; le désideratum est d'obtenir une hyperextension de la colonne.

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RÉSUMÉ

Volvulus de la totalité de l'intestin grêle

Un enfant, âgé de deux ans et, apparemment, en excellente santé a une attaque soudaine et aiguë de douleur abdominale et de choc sans cause apparente. Un lavement baryté montre un côlon normal. Le compte globulaire sanguin et la température indiquent une lésion abdominale aiguë. A l'opération, on trouva un torsion de la masse entière de l'intestin grêle à son attachment mésentérique. Le gros intestin ne présentait aucune lésion. On corrigea la condition et l'enfant se rétablit tout-à-fait.

ZUSAMMENFASSUNG

Volvulus der Gesammten Masse des Dünndarms

Ein zweijähriges Kind, das anscheinend vollständig gesund war, erkrankte plötzlich mit sehr starken Leibschmerzen ohne ersichtliche Ursachen. Barium-Enema zeigte normalen Dickdarm. Blutbild und Fieber sprachen für eine akute abdominelle Erkrankung. Bei der Operation wurde eine Drehung des gesammten Dünndarms um die Mesenterialwurzel gefunden wobei der Dickdarm nicht beteiligt war. Der Zustand konnte durch die Operation leicht beseitigt werden und das Kind ist seit dieser Zeit ohne Beschwerden.

SUMARIO

Vólvulos de la Masa Entera del Intestino Menor

Un niño de dos años de edad, aparentemente en perfecta salud, fue repentinamente atacado con dolores abdominales y shock sin causa aparente. Un enema de barium reveló un cólon normal. El conteo de la sangre, y la temperatura indicaba una lesión abdominal aguda.

La operación demostró que la masa completa del intestino delgado estaba torcido en su inserción mesentérica sin afectar el intestino grueso. La condición fue facilmente aliviada con cirugía y el niño ha estado bien desde entonces.

RIASSUNTO

Volvulo dell'entero massa dell'intestino tenue

Un bambino di due anni, apparentemente in perfetta salute, fù colpito improvvisamente da terrifici dolori addominali con shock, senza una causa apparente. Un clistere con bario, rilevò un colon normale. L'esame del sangue e la temperatura indicavano lesione addominale acuta. All'operazione l'entera massa dell'intestino tenue fu travata in torsione al suo attaccamento mesenterico, senza interessamento del colon. Questa condizione fù facilmente corretta dall'atto operatorio, e il bambino si ristabili completamente.

* * *

VOLVULUS OF THE ENTIRE SMALL INTESTINE AND TORSION OF MESENTERY

A CASE REPORT

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VOLVULUS of the small intestine, and particularly of the entire small intestine without involvement of the cecum and the ascending colon, is a comparatively infrequent cause of intestinal obstruction. It is encountered rarely. Its diagnosis may not be made promptly enough to insure successful operation. In fact, the condition may not be recognized even when the abdomen is opened, may be found only at autopsy, or failing that, may not be diagnosed at all. The reporting of a case, therefore, occurring in a two-year old child who was operated upon with prompt recovery, may not be without interest.

INCIDENCE

The incidence of volvulus varies as to country and as to age and sex. Vaughan (1903), in this country, collected 60 cases of volvulus. About 30 per cent were of the small intestine and of this group there were 20 cases of torsion of the entire small intestine and mesentery. He reportd a personal case. Lawson (1927) brought the number up to 77 including a personal case. He stated that more than half of all cases of volvulus are at the sigmoid flexure and a smaller number at the cecum; the small intestine is the least commonly affected and in only a small proportion the entire small intestine is involved. The Massachusetts General Hospital in 20 years had 239 cases of intestinal obstruction, 29 of which were cases of volvulus; of these, 10 were of the small intestine and one was of the entire small intestine with torsion of the entire mesentery. At the London Hospital in 13 years there were 669 cases of intestinal obstruction, 27 of which, or 4 per cent, were due to volvulus, in 7 the small intestine being involved.

In the Italian literature, Margarucci and Stoppato (1925) reported 21 cases of volvulus of the small intestine in 723 cases of occlusion. Nino della Mano, in 342 cases of intestinal occlusion, reported 6 cases with involvement of a loop of small intestine; in one case there was complete torsion of the mesentery. Pizzagalli reports from the surgical service of Milan Hospital, 1923-1931, 402 cases of occlusion, 18 of the small intestine.

The incidence of volvulus is greatest in Russia and the Scandinavian countries. Faltin (Helsingfors) collected 153 cases of obstruction; 78, or 51 per cent, were due to volvulus; 22 per cent occurred in the small intestine. Spassokukozky (Russia) had 28 cases personally in 11 years and Skljaroff had 36 cases in about the same period. The 28 cases occurred in 47 cases of occlusion. This affords an example of the greater frequency of volvulus of the small intestine in the Russo-Scandinavian as compared with the Anglo-American, Latin and German countries. In 200 cases of pyloric stenosis (Spassokukozky), five were complicated by volvulus of the small intestine.

SEX

A number of authors mention a greater frequency in the male sex with such ratios as 2:1 and 3:2 (Donati, Wilms, Skjaroff, Lawson). McIver found a greater frequency in males. McKechnie and Priestly reported 34 cases of volvulus of the small intestine in 25 years at the Mayo Clinic (37 operations, 3 of ditis, leukemia, pulmonary tuberculosis and Hodgkin's disease. From the standpoint of differential diagnosis, it must be recalled also that hyperpituitarism, gigantism and acromegaly increase the metabolic rate on occasion up to 40 per cent above normal and that cardiac decompensation may also raise it to a considerable level. During pregnancy the metabolic rate rises gradually until term, when the total increase averages about 20 per cent above the previously normal rate.

Lowering of Rate. Minus basal metabolic rates are common to normal as well as abnormal physical states. Patients thus affected may be classified into two groups: the physically normal and the physically abnormal. Physically normal individuals with low basal rates may be the residents of cold climates or the victims of severe insomnia, undernutrition, depressing drugs or allergy. The physically abnormal group may show minus metabolic rates either in combination with minus values in the heart rate, hemoglobin percentage, blood pressure readings, respiratory rate and other physiological factors; or in combination with actual evidence of gross pathological processes, such as undernutrition, obesity, dehydration, cachexia, hypopituitarism, hypothyroidism or hypoadrenalism. In the last three disease entities the basal metabolic rate may vary between minus 20 and 35 per cent.

Age. The determination and interpretation of the basal metabolic rate of infants and children lacks standardization. Intelligent cooperation of a child under 7 years of age cannot be assured, and to acquire dependable readings special laboratory technic and skill are required. Insufficient knowledge concerning the physiologic processes of growth and their effect upon the metabolism of children makes for difficulty in basal rate determinations. Standards derived in accordance with total calories for weight and height are universally applicable.

Much that is stated here is common knowledge, yet there is justification for the intended emphasis when confronted with the frequency with which basal metabolism tests are requested in unwarranted circumstances. Except for thyroid and pituitary disease, pathological lesions constantly producing variations in the metabolic rate are readily diagnosed by the usual clinical methods. However, a knowledge of those conditions in which the metabolic rate is affected is essential to the proper application and interpretation of the test.

INDICATIONS FOR USE

Metabolism tests are applied as an aid in differentiating hyperthyroidism from neurocirculatory asthenia and early tuberculosis; in differentiating toxic from nontoxic goiter; in estimating the degree of toxicity in a given case; in determining whether the toxicity remains *status quo* or whether it is rising or falling, as shown by repeated tests; and in evaluating and instituting preoperative treatment of hyperthyroidism. These tests are also of assistance in the evaluation of radiation therapy in hyperthyroidism and in the estimation of the residual basal metabolic rate during remission or after either radiation therapy or operative procedures on the thyroid gland. Less frequently, metabolism tests may be used in the differentiation of hypopituitarism from eunuchoidism, of Addison's disease from myxedema, more rarely between Addison's disease and chronic nephritis; to distinguish simple from pathological obesity; and as a guide in the treatment of hypothyroidism.

Hyperthyroidism. The efficacy of metabolic criteria in the diagnosis of early hyperthyroidism has not been established by exp
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of the small intestine, beginning about eight inches above the cecum, had occurred at some period in intrauterine life. It caused trouble only when peristalsis started. The colon was collapsed and undeveloped below the volvulus.

Predisposing or activating causes mentioned repeatedly in the literature are unusual effort or movements of the body, intestinal distention, and peristaltic activity of the intestine. The greater frequency of volvulus of the small intestine in Russia and Scandinavia is attributed to the elongated jejunum and to the repeated sudden filling of the intestine with poorly digestible food (Pupini, reporting volvulus of small intestine in an adult). McKechnie and Priestly call attention to the coarse, voluminous, poorly prepared food, associated with meteorism, and note that knots are more common in inhabitants of Finland than among the Finns of Minnesota. Lawson states that vegetarian or bulky diets result in intestinal atony or chronic distention, thus largely contributing to a twisting of the bowel. Purgation may be a factor in disordered peristalsis.

However, cases are frequently reported in which congenital, acquired, or predisposing causes are not in evidence. A successful operation carried out with a minimum of trauma does not afford the same opportunity for etiologic study as an autopsy.

DIAGNOSIS

Diagnosis is always very difficult and often impossible. Naturally the clinical picture is varied according to the location and extent of the volvulus, the degree of rotation and the tightness of the twist. Symptomatology, often very meager, may be completely absent (Trillat and Boulez), especially in the newborn and in infants.

Pain was the first symptom in 82.9 per cent of the cases analyzed by McKechnie and Priestley. In a number of cases pain was so severe as to require morphine (Stalker). Previous colicky attacks and constipation were noted in adults. Nausea, vomiting, constipation and meteorism are common. Vomiting is sometimes fecal or meconial. Temperature is frequently noted as normal with the pulse about 100. Such symptoms are not pathognomonic of volvulus. The behavior of acetonemia, studied especially by Poynton in infants, the initial rapid fall of blood pressure, and the absence of borborgimi in the initial phases cannot be depended upon for differential diagnosis with safety. When the rotated tract is extensive and the torsion occurs with great rapidity, it may be impossible to differentiate the condition from that of peritonitis with perforation, acute pancreatitis, and occlusion of mesenteric vessels. Distention of the abdomen, resistance of the walls, and extreme pain may occur with greater rapidity than in perforations and pancreatitis. Diagnoses of appendicitis, ureteral stone, or gallstone colic may not be ruled out.

Patients with volvulus do not indicate even in an approximate manner the location of the pain in many cases. Particularly in the newborn, pain may not be in evidence. Bryant, Cabot, Morimoto, and other authors describe cases of volvulus of the small intestine with melena. Rapid appearance of abdominal fluid is noted at operation or autopsy more frequently than clinically. Not all cases present evidence of distended loops, peristalsis, and asymmetry. Closure of the bowel is not always complete. Absence of constipation often delays diagnosis (Leonard). In the newborn, meconium was expelled up to the time of operation or until death occurred (Metzger).

Lawson, in his collection of 77 cases, noted four in which diagnosis was not made after the abdomen was opened (Debrie, Kirmisson, Delbet, and Delore).

It is necessary that technicians be familiar with the regularity in appearance of typical graphs and that those graphs be rejected as meaningless whose curves do not correspond to what experience has shown to be characteristically regular. It should also be the privilege of the technician to suggest the repetition of tests whenever conviction indicates that previous tests are in error. A continuously regular graph over a period of six consecutive minutes is believed adequate.

Mechanical Perfection. The apparatus, in order to afford the greatest satisfaction, should be simple and of good, standard quality, although not necessarily expensive. It should be examined frequently for defects and if leaks are found, it should immediately be repaired. The necessity for a closed breathing system requires the exclusion of leaks before each test. Technicians who make numerous metabolism estimations find it advantageous to use two sets of apparatus, frequently checking the results obtained with one against those obtained with the other. The Soda-lime, through which the expired air is passed, must be of specific character and consistency It should be fresh and the granules should be of proper relative proportions and sufficiently hygroscopic to absorb moisture from the expired air. When stale, Soda-lime tends to cake and channel. The air then passes over the surface or by way of the channels instead of through the lime, a circumstance resulting in the failure of carbon dioxide extraction. Carbon dioxide stimulates respiration, which in turn makes for increased muscular activity and greater utilization of oxygen, thereby increasing metabolism.

Tranquilization of Patient. Transient conditions that induce the expenditure of energy, such as muscular exertion, absorption of food and emotional states, will increase the rate of metabolism. Muscular effort requires of the tissues an expenditure of chemical energy equivalent to the work done. This increases the basal metabolic rate from a few per cent for slight movements to many per cent for extensive motion. Ordinarily this effect subsides in twenty minutes after the muscles are at rest.

Food in the process of absorption greatly increases the metabolic rate. Lusk believes that the direct stimulation of the tissue cells to utilize more oxygen is responsible and refers to this phenomenon as "the specific dynamic action of foods."

Emotional states raise the metabolic rate in proportion to the intensity of the emotion. A fit of anger is capable of inducing a rate several hundred per cent above normal. Patients who are thyrotoxic are readily stimulated beyond usual proportions. Those of neurotic temperament, even in the absence of thyrotoxicosis, may become so excitable as to interfere materially with the proper performance of a metabolism test.

Therefore, the optimum period for a basal determination is the one during which the body is expending the smallest amount of energy, namely, when there is complete absence of emotion, when the gastrointestinal tract is free of food and when the voluntary muscles are at complete rest. In order to assure these optimum conditions, the patient should be hospitalized in a private room at least 24 hours, preferably 48 hours, before the test is made. The hospital room should be in a quiet section of the institution, preferably some distance from the wards. The admission bath and other routine procedures that are likely to stimulate the nervous patient are best deferred. The evening meal should be light and easily digested. No food should be allowed during the 14 hours preceding the test. The patient should be apprised of the significance and assured
of the simplic
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operate. If he

or through 1260 degrees. Vaughan found the direction of the torsion to be clockwise in 24 and counterclockwise in two cases. The rotation, it seems, is commonly in a clockwise direction (62 per cent, according to Donati) due to the obliquity of the insertion of the mesenteric root (Henke-Lubarsch, Kleinschmidt and Hohlbaum, Wilms, Rouville, Braun and others).

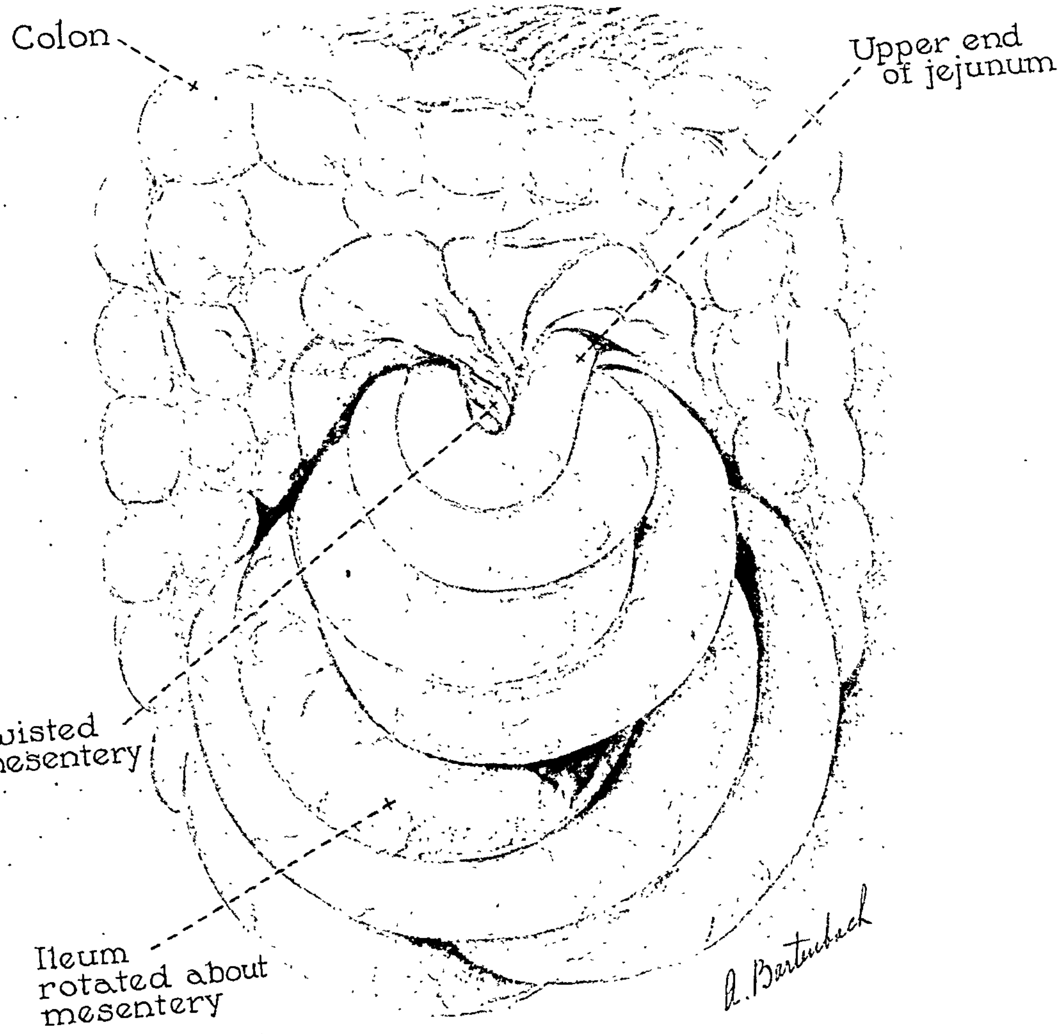

Fig. 1. Volvulus of entire mass of small intestine occurring in a two-year old child.

Free fluid in the abdominal cavity is a common finding.

PROGNOSIS

Lawson reports, in the 77 collected cases, operation in 57 with recovery in 25 (43.8 per cent); Weible, 65 cases, 23 recoveries. All successful operations were performed within 48 hours after the patients were seen. In late operation the cause of death is due to injury to the between plus 55 and 75, falling to between plus 35 and 55 in less toxic cases and to between plus 20 and 35 in milder cases[3]. In nodular toxic goiter the rate is lower than in diffuse toxic goiter, usually ranging from plus 20 to 35

CONCLUSIONS

1. The subordination of methodical reasoning and systematic clinical observation to technical measures is to be condemned.

2. Metabolic readings are of inestimable value in the study of thyroid disease; but the diagnosis of thyroid states based upon the metabolic rate alone is often erroneous.

3. A knowledge of those conditions in which the metabolic rate is affected is essential to the proper application and interpretation of the test.

4. The efficacy of metabolic criteria in the diagnosis of early hyperthyroidism has not been established by experience.

5. A number of thyrotoxic patients have been operated upon inopportunely, with resultant serious consequences, because the surgeon relied upon untrustworthy metabolism data. The clinical condition of the patient is the best criterion of safe operability.

6. Confidence in the results of metabolism tests is dependent upon the competence of the technician, integrity of the apparatus employed, preparation of the patient so that a trustworthy basal rate is assured, orderly routine of the test procedure and the proper evaluation of metabolic readings.

7. The noxious practice of having patients present themselves at distant offices immediately preceding metabolism tests is contrary to an assured basal state of metabolism. Metabolism is increased in variable ratios to the work done, whether that work be expressed in physical, digestive or nervous energy; and the greater the distance travelled the more numerous will be the encounters with nervous system stimulants, a circumstance resulting in a corresponding divergence from the proper basal rate.

8. The basal metabolic rate very rarely rises to plus 100. More often it ranges between plus 55 and 75, falling to between plus 35 and 55 in less toxic cases and to between plus 20 and 35 in milder cases. In nodular toxic goiter the rate is lower than that in diffuse toxic goiter, usually ranging from plus 20 to 35.

9. The basal metabolism test is of value as a control in the regulation of treatment in hypothyroidism.

SUMMARY

Indications for the use of the basal metabolism test and misapplications of the procedure are discussed. Reliance upon tests alone, without consideration of clinical findings, and incompetent interpretation of laboratory findings are condemned. Pathologic conditions in which the basal rate may be above or below normal, and which must therefore be differentiated from thyroid disease by clinical methods, are described. Efficiency of the technician, proper preparation of the patient and mechanical perfection are stressed.

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RÉSUMÉ

Le metabolisme de base: considérations pratiques

Il est discuté dans cette communication l'emploi et la technique de l'épreuve

When the mass was untwisted, the intestines were replaced in the abdomen and the abdomen was closed without drainage.

Postoperative Course. Intestinal distention was troublesome for a few days, but the child made a good recovery and has remained well since.

The postoperative measures consisted of administration of 250 cc. of normal saline solution and 5 per cent dextrose, 3 and 12 hours after operation, by the intravenous method. Nembutal was given by rectum as needed to control restlessness. Water was given by mouth in small amounts, beginning 12 hours after operation. An electric pad was applied to the abdomen for distention. Orange juice, two ounces, was given by mouth 24 hours after operation and normal saline, two ounces, was given by retention enema every three hours. The child had very small veins which made the giving of nutrition or fluids by the intravenous method difficult. We were prepared to give blood transfusions if necessary; but none were given, since the red blood count and hemoglobin were always within normal range. On May 5, two days postoperative, the count showed red cells 4,180,000, hemoglobin 83 per cent, leucocytes 7,850, polymorphonuclears 58 per cent, stab forms 18 per cent, segmented cells 40 per cent, lymphocytes 41, mononuclears 1. Three days postoperative a rather sudden elevation of temperature and pulse was observed along with frequent, watery stools. This was probably a reaction due to the bruising and twisting of the mesentery and to adenitis in the twisted mesentery as found at operation. This reaction lasted about 24 hours, then rapidly subsided. Kaomagma was given by mouth for watery stools and apparently was helpful. At about this time an x-ray of the child's chest made by means of a portable x-ray showed the lungs to be normal.

It is interesting to note that the child's parents were well-to-do and had given him the best of care in every way. A pediatrician had examined the child frequently and had regulated the food and the manner of living from the time of birth.

SUMMARY

A child two years old apparently in perfect health was suddenly seized with extreme abdominal pain and shock with no apparent reason. A barium enema revealed a normal colon. The blood count and temperature indicated acute abdominal injury. Operation revealed twisting of the entire mass of small intestines at the mesenteric attachment with no involvement of the large bowel. The condition was easily relieved by surgery and the child has been well since.

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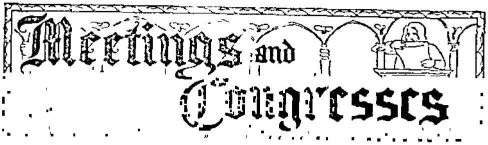
Meetings and Congresses



NATIONAL ASSEMBLY OF U. S. CHAPTER, I.C.S.

The United States Chapter of the International College of Surgeons will hold its fourth annual assembly in Venice, Florida, February 11-14, 1940. A complete program will appear in the February issue of the Journal.

SESQUI-CENTENNIAL CELEBRATION OF THE MEDICAL SOCIETY OF DELAWARE

The Medical Society of Delaware held its one hundred and fiftieth annual session October 9-11 at the Delaware Academy of Medicine in Wilmington under the presidency of Dr. Meredith I. Samuel.

One of the outstanding features of the meeting was the exhibit of books, photographs, instruments and other articles belonging to the early members of the Society, some of the articles being the property of the Academy and others being loaned by interested persons.

Dr. Fred. H. Albee, of New York City, president-elect of the International College of Surgeons, spoke on "The Massive Resection of Bone Sarcoma with Immediate Bone Graft Replacement." Other papers presented were "Sulfapyridine as a Bacterial Chemotherapeutic Agent;" "The Difficulty in Early Diagnosis of Primary Cancer of the Lung;" "Right Paraduodenal Hernia;" "Hormone Therapy: Uses and Abuses;" and "Ophthalmology and Its Relation to Industry."

Speakers at the banquet for members of the society and of the Woman's Auxiliary were the Hon. Richard C. McMullen, governor of Delaware; Mrs. Rollo K. Packard, national president of the woman's Auxiliary, American Medical Association; Dr. L. A. H. Bishop, past president of the Medical Society of Delaware; and Dr. Rock Sleyster, president of the American Medical Association.

In commemoration of the Society's 150 years of existence, Dr Samuel, president, compiled an excellent book The Society was organized by a group of 27 physicians just 12 days after Washington took the oath of office. Numerous pictures and short biographic sketches of many of the early presidents embellish the text.

GRADUATE FORTNIGHT OF NEW YORK ACADEMY

"The Endocrine Glands and Their Disorders" was the subject discussed at the twelfth annual Graduate Fortnight of the New York Academy of Medicine which opened October 23. In addition to the 2,300 fellows of the academy, 700 visiting physicians were registered.

Dr. Malcolm Goodridge, president of the academy, opened the conference with an address of welcome. Twenty-two clinical demonstrations were held in seventeen of the hospitals of New York City and eight round table conferences were conducted. Speakers drawn from the leading universities and research institutions of the United States and Canada addressed the ten evening meetings.

They included: **Dr. H. M. Evans**, director of the Institute of Experimental Biology of the University of California; **Dr. J. B. Collip**, professor of biochemistry, McGill University; **Dr. Elmer L. Sevringhaus**, professor of medicine, the University of Wisconsin; **Dr. Walter B. Cannon**, professor of physiology, Harvard University; **Dr. Robert F. Loeb**, professor of medicine, Columbia University; **Dr. C. N. H. Long**, Sterling professor of physiological chemistry, Yale University; **Dr. R. T. Woodyatt**, clinical professor of medicine, Rush Medical College; **Dr. John F. Fulton**, Sterling professor of physiology, Yale University; **Dr. William G. MacCallum**, professor of pathology, the Johns Hopkins University, and **Dr. Philip E. Smith**, professor of anatomy, Columbia University. The scientific exhibit, which covered many aspects of endocrinology, was in the building of the New York Academy of Medicine.

Exhibits of recent advances in the various fields of pure and applied science are desired by the **American Association for the Advancement of Science** for its annual exhibition, which this year will be held at Columbus Space will be provided for exhibits of special interest to members of the association attending the
Applications should be made to the
Exhibits, 3941 Grand Central Te
York, N. Y.

BASAL METABOLISM: PRACTICAL CONSIDERATIONS

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IN a previous publication[1], certain practical observations relative to the basal metabolism test, with particular reference to thyroid disease, were discussed. Because of the manifest continued misapplication of the procedure and the apparent confusion or lack of understanding regarding the significance of this frequently invaluable laboratory aid, it is deemed advisable to reevaluate its use in conformity with more recent experience.

VALUE OF CLINICAL FINDINGS

Unintelligent resort to laboratory procedures and inordinate reliance upon various tests of doubtful merit are a menace to scientific diagnostic progress. Dogmatic dependence upon laboratory shortcuts is, like snap-diagnosis, "a rapid method of arriving at the wrong conclusion." The subordination of methodical reasoning and systematic observation to technical measures results in a fallacious approach to any diagnostic problem. Incompetent determination and misinterpretation of laboratory findings are responsible for serious errors. Those who resort to basal metabolic tests routinely in suspected thyroid disease, before clinical studies are complete, are, to say the least, not serving their patients well.

Metabolic readings are of inestimable value in the study of thyroid disease, but they should not supplant clinical observation. They are a valuable link in the chain of scientific evidence pointing to certain pathologic entities. The diagnosis of thyroid states based upon the metabolic rate alone often leads to errors.

FACTORS AFFECTING RATE

Elevation of Rate. Metabolism rises not only in hyperthyroidism, but also by desultory increments in certain diseases previously enumerated[1]; and combinations of these several conditions may affect the basal metabolic rate variously. For example, an emaciated diabetic patient with fever may present a normal metabolic rate through counteraction of the increased metabolism due to diabetes and fever by the decreased metabolism resulting from cachexia. This hypothetical possibility establishes the necessity for clinical judgment in the evaluation of metabolism reports.

The importance of ascertaining the basal metabolism rate in a patient suffering from thyroid disease is not disputed. It is deemed more important, however, to acquire a knowledge of the cardinal symptoms and the characteristic physical signs of thyrotoxicosis. Even though an elevated metabolism rate is an inseparable part of toxic goiter, knowledge of the basal metabolism rate will not assist in the diagnosis nor will it reflect the severity of the thyrotoxic syndrome in all cases. In a small percentage of goitrous patients the metabolic rate will be markedly elevated without correspondingly severe clinical manifestations. In a larger number of similarly diseased individuals the exaggeration of symptoms will be strikingly disproportionate to the low elevation in the metabolic rate.

Febrile diseases, particularly those which are latent in their clinical manifestations and whose presence therefore is commonly unsuspected, increase the metabolic rate approximately 8 per cent for each degree of fever rise, whereas in mild cases of hyperthyroidism the total increase in metabolism is only about 15 per cent.

Those conditions that may prove confusing on the basis of metabolic criteria are acute pericarditis, acute endocar-

Obituaries

Harvey Cushing, most distinguished of all surgeons in operative procedures on the brain, recognized as an accomplished author, educator, philospher and leader, died in New Haven, Conn , Saturday, October 7, of coronary thrombosis. He was the fourth Cushing in a direct line to win distinction in a medical career

Dr. Harvey Cushing was born in Cleveland, April 8, 1869, the ninth child in his family. His well known brother, Edward F Cushing, M D., a pediatrician, died in 1911; his father, Henry K. Cushing, formerly professor of obstetrics and gynecology in Western Reserve University School of Medicine, died in 1910; his grandfather, *Erastus Cushing, died in 1893, and his great grand*father, David Cushing Jr , of Massachusetts, died in 1840

After receiving the bachelor of arts degree at Yale in 1891, where incidentally he also played baseball, Dr. Harvey Cushing graduated from Harvard Medical School in 1895, receiving the degrees of master of arts and doctor of medicine. He entered the Massachusetts General Hospital as surgical intern, working with Dr. J. C. Warren. In 1896 he went to Baltimore as junior assistant in the surgical service of Halsted, ming resident surgeon in 1897 and devel 'nstructor in surgery, assistant in sur o-when consistently correlated with clinical evidence. Patients in whom the diagnosis of hyperthyroidism is obscure should be instructed to return in two months for further observation. In the interim, one or more of the cardinal symptoms of toxic goiter may become manifest and the calorimetric record conclusive.

The metabolism rate is not a dependable factor in deciding the optimum period for operation in thyrotoxicosis, although Mayo, in 1921, showed a decreased mortality for operations performed during a falling as compared with those performed during a rising rate. Not a few thyrotoxic patients have been operated upon inopportunely, with resultant serious consequences, because the surgeon relied upon untrustworthy metabolic data. However (and this is not only because of the many possibilities of technical errors in laboratory procedures), the clinical condition of the patient remains the best criterion for safe operability. The age of the patient, the duration of the disease, the amount of weight lost, the weight gained while under treatment, the tension and rate of the pulse, the general response to rest and iodine therapy, the mental state and the nervous reactions during physical examination are considerations that best indicate the degree of surgical risk in thyrotoxic cases.

Hypothyroidism. The comparative rarity of hypothyroidism clinically is evident by the few requests for metabolic readings in which a low rate is suspected. It is interesting to note, however, the frequency with which low rates are discovered, quite by accident, in follow-up examinations and in so-called routine metabolism tests. A basal metabolic reading in the downward direction, although less impressive than a high reading, is equally important to an effective plan of treatment; and it is quite remarkable how quickly these minus rates approach the normal following the administration of thyroid extract. In the treatment of thyroid hypofunction, repeated metabolism tests will guide the physician in the quantitative regulation of medication.

ELIMINATION OF ERRORS

If confidence is to be placed in basal metabolic rate estimations, as must be the case in the study of thyroid disease, then those estimations should be of the greatest reliability. Perfection should be sought through directed attention to the following details.

Competence of Technician. Understanding how a thing is done and actually doing it are distinctly different matters. It is no more essential that a surgeon be familiar with the technical details of performing a metabolism test than it is that he should be able to do a blood Wassermann test. He should know the theory of both; but it is not necessary that he should specialize in their details. An acquisition of knowledge concerning the minutiae is for the technician. Only those who are competently trained and who are sufficiently experienced to interpret properly the findings should be relied upon for metabolism tests. All hospitals should delegate this field of endeavor to a particular technician who should be held unremittingly responsible for the integrity of the apparatus and for gross technical errors.

The importance of this office cannot be too greatly stressed. Mature understanding, an easy, pleasant demeanor and absolute honesty on the part of the technician are requisite to the best interests of the goitrous patient. A recent experience, wherein a technician inquired of an intern as to the staff opinion of a patient's toxicity and then made the metabolic reading conform to her misinformation, represents a case of flagrant technical incompetence.

William Bradley Reid, M.D., F.I.C.S., of Rome, N. Y., died November 10 at the age of 66 years. He will be remembered not only for his work as a surgeon but also for his service to his city, of which he was mayor in the early twenties and again in the early thirties, and for his military service overseas. He traveled widely, to observe people and to study medical science and other forms of government. He studied especially the causes of goitre among the people of South America, whom he visited twice for this purpose. The president of Venezuela once placed an airplane at his disposal, appointed Father Para, a Catholic Priest who was also a surgeon, as Dr. Reid's assistant, and offered every aid and personal cooperation to this stranger from the United States. He entered the war of 1914 voluntarily, was wounded, and was honored with military titles. Among honorary pall bearers were Chancellor William Pratt Graham of Syracuse University; Dean Herman G. Weiskotten of the College of Medicine, Syracuse University; Supreme Court Justice Hawley N. Crosby, Falconer, N. Y.; Capt. Rollin L. Bauchspies, Medical Corps, U. S. Army, professor of military medical science and ranking medical officer of the First Military Area, Syracuse University; and Prof. Ernest Reed, director, Syracuse University Andean Expedition.

Bologna. In 1926 he received the honorary doctor of laws from the University of Glasgow, in 1928 the doctor of laws from Jefferson Medical College and the Doctor of Medicine from John Casimer University of Lwow, Poland. In the following year he was made honorary fellow of the Royal Society of Medicine of England, of the Royal Academy of Medicine of Ireland, master of surgery of Trinity College, London, doctor of laws of the University of Edinburgh and a fellow of the Royal College of Surgeons of Edinburgh. In 1929 there was published in his honor a special number of the *Archives of Surgery,* dedicated to his sixtieth birthday. A similar festschrift was later published by *Acta medica Scandinavica.* In 1932 Dr. Cushing retired from his posts in Boston and became Sterling professor in the School of Medicine of Yale University, teaching neurology and the history of medicine and holding this position until 1937, when he became emeritus professor.

In addition to the famous "Life of Sir William Osler," Dr. Cushing published "The Pituitary Body and its Disorders" in 1912, "Tumors of the Nervous Acusticus" in 1917, with Dr. Percival Bailey "A Classification of the Gliomata" in 1925, collected essays under the title "Consecratio Medici" in 1928, "Intracranial Tumors" in 1932, and in the same year a book on "The Pituitary Body and the Hypothalamus."

In July 1938 Oxford University conferred on him the honorary degree of doctor of science, on which occasion great physicians and surgeons from all over the world assembled to honor him. It was pointed out that his former pupils hold positions in Brussels, Louvain, Amsterdam, Manchester, Edinburgh, Leeds, London, Oxford and Newcastle-on-Tyne as well as in most of the leading clinics in the United States. There are honorary Cushing Clubs in many medical schools dedicated to his work and his memory.

Since 1931 great universities have continued to honor him. He gave other lectures, such as the Donald Balfour Lecture of the University of Toronto. In 1933 he was honored in Paris, at which time he was presented with the original copy of Clemenceau's thesis for the doctorate in medicine, written in 1865. He received also the honorary degree of doctor of laws from Northwestern University and the honorary degree of doctor of medicine from Budapest.

Of recent years Dr. Cushing had shown special interest in maintaining the traditional professional status of the physician and surgeon and he had given freely of his time and of his efforts in this endeavor. An essay called "Medicine at the Crossroads," published in The Journal, May 20, 1933, page 1567, defined his point of view. In this essay he wrote: "Those who deal with the science of society deal with something that actually does pulsate with so short a time cycle that conditions almost from year to year are never quite the same, so that our theories of today are likely to need modifying tomorrow. What this puzzled world needs perhaps is more study of the past, fewer commissions and surveys of the present, and a greater number of philosophically minded, self-supporting and law-abiding persons who can see all round their particular problem and independently devote themselves to it as do most doctors."

In the presence of such a record and such a career, in the light of such a character and such a man, superlatives fail. Great epochs in medicine are marked by the names of physicians whose careers have made these epochs. With Dr. Harvey Cushing, surgery of the brain became for the first time scientifically established. Of him it may be truly said that he was in all that he attempted greatest of the great.

J.A.

or restlessness during his first night in the hospital, the test should be delayed until rest and relaxation are acquired. Sedatives should not be administered. Reading and the admission of visitors should be prohibited, lest the emotions be stimulated to a point equivalent to that of vigorous exertion. Smoking during the night and morning previous to the test should be interdicted.

Orderly Routine. If the patient is transferred from his room to a metabolism department in the hospital, he should be allowed to rest at least 20 minutes before the mouthpiece is attached. This interval will permit of muscular relaxation and mental orientation.

The technician's maneuvers should be executed deftly, calmly and gently. There should be a minimum number of attendants essential to facilitate the procedure. There should be no confusion whatever. After the arrival of the patient, no one who is not directly needed in the actual performance of the test should be admitted to the metabolism department. The entrance of the operating surgeon during the progress of a test is known to have resulted in a false, high metabolic reading.

Evaluation of Readings. When the basal metabolic rate is computed, the degree of variation should be compared with the clinical impression. If there is too great disparity, the test should be repeated until a reasonable correlation is established. In any event, excessively high metabolism reports for clinically low or doubtfully toxic patients call for a repetition of the test. The greatest errors seem to be in the upward direction because patients do not adapt themselves readily to hospital routine. Rarely, therefore, is the first test of any value. If wide variations occur between successive tests, or between several tests made within a period of a few days, the readings should be assumed to be incorrect and further readings should be obtained.[2]

Partially as the result of advertisements of various manufacturers of metabolism equipment, the noxious practice of having patients present themselves at physicians' offices or at laboratories immediately preceding metabolism tests is continued; and yet, cursory observation is sufficiently conclusive to condemn such practices. A constant error of 10 to 25 per cent in an upward direction is the consequence of tests made under these circumstances. Neither a highly neurotic individual nor one who suffers from thyrotoxicosis can be in a basal state of metabolic activity after walking, riding or driving to an office. The greater the distance travelled the more numerous will be the encounters with nervous system stimulants, resulting in a corresponding divergence from the basal rate. As previously stated, metabolism is increased in variable ratios to the work done, whether that work be expressed in physical, digestive or nervous energy. That premise has been, and indeed, can be readily proved. In certain of the neuroses minor degrees of stimulation give rise to an emotional explosion. How is it possible, then, for highly neurotic people whose every contact serves to whip their sensitized nervous systems into excesses, to reach a basal rate of metabolism by resting a mere half hour after active exercise or after ordinarily moderate excitement? It is in the latter group of patients that the basal metabolism test is of especial assistance in differential diagnosis, provided the test is precisely executed under ideal circumstances.

It is also a recognized fact that thyrotoxic patients are emotionally most unstable. Not infrequently their nervous reactions closely resemble those characteristic of actual psychoses. In these, metabolic activity is extremely increased. However, carefully conducted tests show that the basal metabolic rate very rarely rises to plus 100. More often it ranges

3. Nitrous oxide and oxygen is very efficient for second stage pains and low forceps and spontaneous deliveries
4. Ether is perhaps the most useful anesthetic in obstetric practice
5. Local anesthesia solves the problem in heart disease, toxemia and depression from hemorrhage

A rapid review of the role played by the endocrine glands in menstruation, ovulation and placentation is well handled

The book concludes with an extensive chapter on obstetrical jurisprudence and an extensive bibliography. As a whole it may be stated that the text is a distinct and valuable contribution to contemporary obstetrical literature. The work is practical, comprehensive and truly worth while. It should be in the library of everyone interested in the practice of obstetrics

L. J. GOODMAN.

Annual Review of Physiology. Edited by James Murray Luck. Price, $5. Pp. 712. American Physiological Society and Annual Reviews, Inc., Stanford University, P. O., California, 1939

THE American Physiological Society has undertaken the stupendous task of making a yearly *critical* review of the research work in physiology published through the world. The first volume is published with a joint Board of Managers composed of C. D. Leake, J. M. Luck, W. J. Meek and C. L. A. Schmidt, and an editorial committee composed of A. J. Carlson, J. F. Fulton, M. H. Jacobs, F. C. Mann and W. J. Meek.

The research work of over 3,100 authors is reviewed under the following chapters: *Permeability,* M. H. Jacobs; *The Biological Effects of Radiation,* Jane Howell Clark; *Physiological Aspects of Genetics,* G. W. Beadle; *Developmental Physiology,* Joseph Needham; *Growth,* C. B. Davenport and Otto Rahn, Mary E. Mayer, H. W. Chalkley and D. M. Pace; *Temperature Regulation,* Alan C. Burton; *Energy Metabolism,* John B. Murlin; *The Peripheral Circulation,* H. C. Basett; *Respiration and its Adjustments,* Robert Gesell; *Muscle,* Emil Bazler; *The Digestive System,* A. C. Ivy and John S. Gary; *Physiology of the Liver,* Frank C. Mann and J. L. Bollmann; *Blood: Physiology of Formed Elements and Plasma; Blood Clotting,* J. Harold Austin; *Heart,* J. A. E. Eyster; *Electrical Phenomena of the Brain and Spinal Cord,* Hallowell Davis; *The Spinal Cord and Reflex Action,* J. C. Eccles; *Bioelectric Studies of the Excitation and Response of Nerve,* Detley Bronk and Frank Brink, Jr.; *The Autonomic Nervous System,* Joseph C. Hinsey; *The Special Senses,* J. M. D. Olmsted; *Physiological Psychology,* E. R. Hilgard and C. P. Stone; *Kidney,* Homer W. Smith; *General and Local Anesthesia,* M. H. Seevers; *Applied Physiology,* D. B. Dill; and *Endocrine Glands: Gonads, Pituitary and Adrenals,* Herbert M. Evans.

The book is well indexed by author and subject. Each chapter has a complete bibliography. It is an indispensable reference book for the surgeon preparing to qualify by examination for the American College of Surgeons, American Board of Surgery and the International College of Surgeons.

The American Physiological Society and the editor are to be congratulated for rendering such a valuable service to the Science of Surgery.

W. J. CARSON.

Operative Orthopedics. By Willis C. Campbell, M.D., Memphis, Tennessee. Price, $12.50. Pp. 1154, 845 illustrations, 4 color plates. St. Louis: The C. V. Mosby Company, 1939.

THE text is divided into 23 chapters. In the first chapter, the author considers the physiology and pathology of bones, joints, etc., thus laying the groundwork for the procedures which are described in Chapters 3 to 23, inclusive.

In Chapter 2, the construction, use, and adaptability of certain types of apparatus are described. This material is well illustrated and is interestingly presented. Chapter 3 should be read carefully by anyone who attempts surgical orthopedic procedures; and every orthopedic surgeon should insist that his surgical team read these pages. Chapter 4 explains the various surgical approaches and is filled with many excellent illustrations which assist the student in comprehending the text.

Chapters 5 to 23, inclusive, are well illustrated and cover the full range of orthopedic problems from the surgical standpoint. The chapter on fractures, by necessity, describes principally methods of treatment for fracture cases which have resulted in deformities or complications of some type or other. It is not intended, apparently, to cover the conservative treatment of fractures. This, in general, might be the comment concerning all the work described in this entire book. This point is, of course, brought out by the author in his preface.

The book has been carefully written and is excellently illustrated, but despite this there is one point about the text which is extremely confusing and that is the attitude taken by the author

du metabolisme de base. L'auteur signale aussi les applications fautives de technique. Il ne faut pas se baser uniquement sur le test. Il faut prendre en considération les symptômes cliniques que presente le malade. Il importe de bien préparer le malade d'avoir recours à un technicien avisé et de s'assurer de la perfection mécanique de l'appareil. Il est décrit dans l'article des états pathologiques dans lesquelles le metabolisme de base est augmenté ou diminué et qu'il faut par l'examen clinique différencier des maladies de la glande thyroide.

ZUSAMMENFASSUNG

Grundumsatz: Praktische Überlegung

Die Indikationen der Grundumsatzbestimmung und die falsche Anwendung dieser Methode werden beschrieben. Es wird nicht nur verurteilt sich allein auf Laboratoriumsmethoden zu verlassen, ohne die klinischen Symptome zu berücksichtigen, sondern auch die nicht massgebende Auslegung der Untersuchungsergebnisse. Krankhafte Zustände, bei denen der Grundumsatz entweder erhöht oder erniedrigt ist und die deshalb von Schilddrüsenerkrankungen durch klinische Methoden unterschieden werden müssen, werden genauer beschrieben. Besonderen Nachdruck wird auf die Verlässlichkeit der Laborantin, auf die richtige Vorbereitung des Patienten und auf die Technische Fehlerfreiheit gelegt.

SUMARIO

Metabolismo Basal: Consideraciones Practicas

Las indicaciones para el uso del metabolismo basal y sus aplicaciones herroneas de su procedimiento son discutidas. Descansan en la prueba solamente, sin consideraciones de los hallazgos clínicos, y interpretaciones incompetentes de reportes de laboratorio son condenados. Condiciones patológicas en las cuales el metabolismo basal puede estar alto ó bajo de lo normal y el cual debe de ser diferenciado de las enfermedades tiroideas por métodos clínicos son descritos. Eficiencia de los tecnicos, preparación propia del enfermo y perfección mecánica son de verdadera consideración.

RIASSUNTO

Il metabolismo basale: considerazioni pratiche

Le indicazioni per l'uso della prova del metabolismo basale, e i relativi errori vengono discussi. L'affidarsi solamente su questa prova, senza considerazione dei risultati clinici, e una interpretazione inconpetente delle ricerche di laboratorio, vengono biasimati. Vengono descritte le condizioni patologiche in cui il M.B. può essere al disopra o al disotto del normale, da differenziarsi da disturbi tiroidei. La competenza del tecnico, la preparazione adatta del malato, e la perfezione meccanica, hanno capitele importanza.

Dr. George P. Müller, professor of surgery at Jefferson Medical College, has been appointed to the Grace Revere Osler chair of surgery at Jefferson Medical College. Dr. Müller was graduated from the University of Pennsylvania School of Medicine in 1899.

The status of director of the British Royal Air Force Medical Services has been advanced to that of director-general with the rank of air-marshal. Air Marshall **Sir Albert Richardson,** director of the medical services, thus has been made director-general.

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possess this volume if he wishes to be abreast with the advancements in the treatment of surgical affections of the colon and rectum.

Even a casual survey of the volume engages the attention of the reader. On page 24, for example, the anatomy of the colon, together with the technic for its immobilization, is vividly sketched with pen and ink, leaving an indelible impression. Figure 15, page 27 belongs to the same category and depicts the correct and incorrect method of clamping epiploic appendages, thus illustrating the old Chinese dictum that one picture is worth a thousand words. The majority of illustrations are excellent.

This reviewer was particularly impressed with the chapter dealing with physiology on pages 38-43, and especially its reference to colitis. Here again, in the brief space of two or three pages, much worthwhile material is presented This is of interest not only to the surgeon but to the general practitioner as well. The authors stress the grading of carcinoma by Broders and depict comprehensively the question at issue The late Dr. Richard Jaffé was not quite in accord with the conclusions here stressed Equally, the authors follow the Miles scheme of distribution of the lymph apparatus which is accepted in some quarters with reserve.

The chapter on symptoms and diagnosis is painstakingly thorough, extremely practical and engagingly encyclopedic in nature. The chapter on differential diagnosis should be studied by every medical man, be he surgeon or physician. Chapter 6 contains a wealth of statistical material, from which many valuable lessons are learned. In thoroughness and up-to-dateness this reviewer knows of no better work.

From the practical point of view the surgeon is guided in Chapter 7 to the proper choice of operation best suited for a given case. Thoroughness here is the apex of an obviously painstaking literary effort. Sir Hugh Devine's work on operative procedures in malignancies of the bowel is not mentioned. The chapter concludes with a rich résumé of statistical data and methods of procedure used in various clinics. Pre- and postoperative care are succinctly described.

After a brilliant exposé of the subjects under discussion, the authors present an excellent pen picture of the history of bowel surgery. This is followed with an evaluation and discussion of the technical methods resorted to when the condition is complicated by intestinal obstruction. They conclude with a thorough description on procedures for extirpation of lesions of the colon, rectosigmoid, rectum and anus (Chapters 13, 14).

A final touch of thoroughness is added by the concluding chapter on palliative and miscellaneous procedures dealing with exclusion methods (partial and complete), as well as operations on the sympathetic nervous system as related to bowel surgery.

Each chapter is followed by a comprehensive and thorough bibliography. There is an author's index as well as an index of subjects.

This classical work should be in the hands of every medical man whose primary interest is the welfare of his patient, and who is eager to improve his knowledge on matters related to morbid conditions of the bowel. Credit is due to the publishers for excellent printing and good binding.

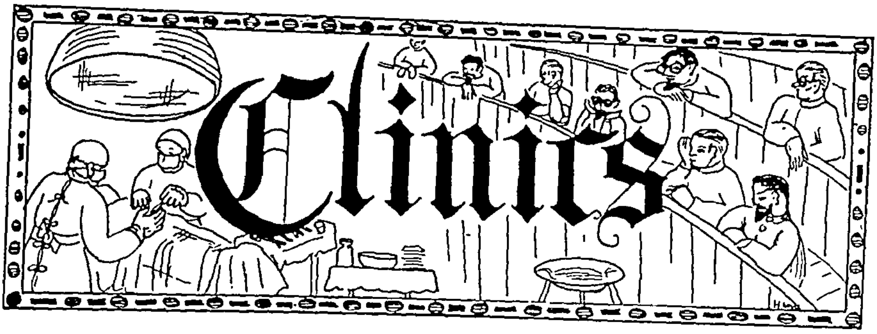
MAX THOREK.

Prima e dopo l'operazione chirurgica. By Prof. Luigi Bobbio, Docent in Royal University, Turin; Chief Surgeon in St. Giovanni Hospital, Turin. Pp. 431, with 64 illustrations. Torino: Unione Tipografice-Editrice Torinese, 1937.

THIS treatise by Prof. Bobbio carries a subtitle, "Physiology and Clinical Aspects of the Operandus and of the Operatus," which gives the true tone to the book and indicates its great value. Bobbio stresses the point that the surgeon should know the physiology of the individual who is submitted to a surgical operation. This physiology is quite different from the normal physiology, and unless the Surgeon is thoroughly familiar with it, he will fail to do justice to his patients. This physiological knowledge is the essential, fundamental base on which the clinical aspects of the operandus and operatus should be observed, studied and interpreted. The reviewer is happy to record the emphasis with which Bobbio insists on these points, because he believes that they are so essential to good surgery that their importance is never emphasized enough

Following the logic of this premise, Bobbio studies the operandus and operatus as an individuality; that is, he insists on studying the physiological and clinical problems concerning each individual. The general aspects of the conditions which may affect the operandus and the operatus are not neglected On the contrary, they are dealt with in a very clear, comprehensive and up-to-date manner. Having, for instance, dealt with disturbances of respiratory, circulatory and other systems and complications, such as diabetes, hyperthyroidism, etc, he returns to the importance of considering how these conditions may affect each operatus and operandus. With sound logic Bobbio sets forth the problems to be solved before the operandus is submitted to the operation in order to avoid avoidable complications and to take care of the unavoidable complications which may follow the operative intervention.

Without entering into a detailed report of each



COLORADO STUDY GUILD

Colorado members of the International College of Surgeons organized a Postgraduate Study Guild at a special meeting held November 8.

Dr. W. T. H. Baker, F.A.C.S., F.I.C.S., of Pueblo, was elected president; Dr. L. E. Likes, F.A.C.S., F.I.C.S., of Lamar, vice-president; Dr. G. H. Stine, F.I.C.S., of Colorado Springs, secretary; and Dr. E. B. Liddle, F.I.C.S., of Colorado Springs, treasurer.

Others present at the meeting were Dr. G. B. Kent, F.A.C.S., F.I.C.S., of Denver; Dr. H. A. Black, F.A.C.S., F.I.C.S., of Pueblo; and Drs. G. W. Bancroft, F.A.C.S., F.I.C.S., F. O. Kettelkamp, F.I.C.S., and M. O. Shivers, F.I.C.S., of Colorado Springs.

INDIANA STUDY GUILD

Plans for a clinical meeting to be held in December at the clinic of **Dr. J. Rudolph Yung,** in Terre Haute, were made at the second meeting of the Indiana Study Guild, International College of Surgeons, held October 25 at the Indianapolis Athletic club. Dr. Yung presided.

This clinical meeting will initiate a series of similar clinical sessions which will constitute a part of the educational program of the Guild. In addition, round table discussions on the fundamental medical sciences will be conducted.

Dr. Yung, president, appointed a membership committee consisting of **Dr. Goethe Link, Dr. William F. Hughes** and **Dr. John W. Emhardt,** all of Indianapolis.

Other officers are Dr. Hughes, vice-president; **Dr. Simon Reisler,** secretary; **Dr. Carl B. Sputh,** treasurer; and **Dr. Vincent A. Lapenta,** Senior State Regent, and **Dr. Karl Ruddell,** State Regent, counsellors. All are of Indianapolis.

WEST VIRGINIA GUILD MEETING

Parkersburg was selected as the next meeting place of the West Virginia Guild, International College of Surgeons, at the meeting held November 2 at the Charleston General Hospital. **Dr. Thomas Harris,** of Parkersburg, was chosen to act as chairman, succeeding **Dr. G. G. Irwin,** of Charleston, and **Dr. King Buford,** of Charleston, was elected secretary, succeeding Dr. Harris.

A day's activities marked the Charleston meeting, with 20 in attendance. An operative clinic was conducted in the morning by **Dr. John E. Cannaday,** Senior Surgical Regent of the State, and **Dr. H. A. Bailey,** both of Charleston. This was followed by a pathological demonstration on embolism and thrombosis by **Dr. Walter Putchart.**

Luncheon was served by the hospital at noon. The afternoon was spent in discussing the morning's work, **Dr. Benjamin I. Golden,** of Elkins, treasurer of the United States Chapter, stimulating the discussion by acting as questioner. Dr. Golden also explained the purposes of the College and of the Guild meetings and pointed out the benefits derived from observing demonstrations of surgery performed under every day conditions as compared with those obtained merely from watching a surgeon demonstrate his scientific ability. The meeting adjourned at 4:30.

ciate in surgery. He made the first roentgenograms that were made at Johns Hopkins Hospital and did experimental studies on gallstones, the bacteriology of the alimentary canal, and cocaine anesthesia. In 1900 he studied abroad, traveling with Drs. William Osler and Thomas McCrae. On this trip Dr. Cushing studied in England and France for a year in Kronecker's laboratory in Berne. Here he carried out some investigations suggested by Kocher on the physiologic relationships of intracranial tension. This work he continued in the laboratory of Mosso in Turin, Italy, and then for four months he worked with Sherrington in Liverpool studying the motor cortex in anthropoids. Late in 1901 he returned to Baltimore and asked for the post of neurosurgeon in the clinic. Here he remained until 1912, during which time he became associate professor of surgery. He gave the Mutter lecture in Philadelphia in 1901. He became a member of the American Neurological Association in 1903 and president in 1923, a charter member of the American Society of Clinical Surgery in 1903 and president in 1921, a member of the American Physiological Society in 1905, a fellow of the American Surgical Association in 1906 and president in 1927. Dr. Cushing was secretary of the Section on Surgery and Anatomy of the American Medical Association in 1906-1907. He gave the Carpenter lecture in New York in 1906 and the W. M. Banks Memorial lecture in Liverpool in 1909 and the Harvey lecture in New York in 1910. During this period he developed his marvelous technic in neurosurgery. The earlier operations were failures, but Dr. Cushing's courage, precise technic and remarkable spirit began to yield success and his fame spread widely. During this period he developed and described the subtemporal decompressive operation and perfected hemostasis in operations on the brain and new technics for suture. His contributions to the physiology of the brain, the spinal fluid and the pituitary body were fundamental.

In 1912 Dr. Cushing became Mosely Professor of Surgery at Harvard and Surgeon-in-Chief to the Peter Bent Brigham Hospital. He received the master of arts from Yale in 1913, gave the oration of surgery at the International Congress of Medicine in London in 1913 and was made a fellow of the Royal College of Surgeons, of the American College of Surgeons of which he became the president in 1922 and of the Institute of Hygiene in London. He gave the Weir Mitchell lecture in Philadelphia in 1914 and was elected at that time a foreign member of the Société de neurologie in Paris, of the American Academy of Arts and Sciences and of the Washington Society of Arts and Sciences.

In 1914 came the great war, during which the remarkable service rendered by Harvey Cushing was universally recognized. He served with distinction in the British Expeditionary Force; he became surgical director of the United States Base Hospital No. 5 and was appointed senior consultant of neurologic surgery with the American Expeditionary Forces with the rank of colonel. For these services he received the Distinguished Service Medal of the United States, the Companion of the Bath of England, and Officer of the Legion of Honor of France. His war service is reflected in his recently published "Diary of a War Surgeon." Evidently this service in the war was a terrific physical stress, for Dr. Cushing returned to Boston in 1919 suffering from peripheral neuritis, which was to handicap him during the remainder of his career. Nevertheless in the years from 1919 on he worked indefatigably. He turned to an interest in the history of medicine and made a complete collection of the writings of Vesalius. At the same time he developed a surgical team for neurologic surgery and himself studied intimately the microscopic anatomy, gross anatomy, pathology and physiology of conditions within the brain. Young surgeons flocked to him from all over the world. Today his pupils have won distinction as neurosurgeons. In 1918 he became fellow of the Royal College of Surgeons of Ireland. He received the degree of doctor of science from Washington University in 1919 and in the same year the honorary doctor of laws from Western Reserve University, doctor of science from Yale and Doctor of Science of Queen's University, Belfast. In 1920 he received the degree of honorary doctor of laws from Cambridge and in 1921 was made honorary fellow of the Medical Society of London, giving the chief oration in 1927. In 1921 he became a corresponding member of the Medical Society of Vienna and in 1922 a Charles Mickle Fellow of the University of Toronto, also the Cavendish Lecturer (London) and was awarded the title of Honorary Perpetual Student of St. Bartholomew's Hospital, London. He also became a corresponding member of the Medico-Chirurgical Society of Edinburgh.

After the death of Sir William Osler, Lady Osler turned over all her data relative to her distinguished husband to Harvey Cushing and he took up the task of preparing the famous biography. This book appeared in 1925 in two large volumes and was awarded the Pulitzer Prize as the best biographic writing of the year.

In the meantime he continued his surgical operations and received additional honors. In 1923 he became a foreign member of the Académie de médicine of Paris and a fellow of the Association of Surgeons of Great Britain and Ireland. In 1924 he gave the Cameron Prize Lecture at Edinburgh and was elected a corresponding member of the Società medico-chirurgica di

Book Reviews

Les Erreurs et les Fautes en Urologie. By L. Strominger, Docent d'Urologie à la Faculté de Médicine de Bucarest; Lauréat de l'Académie de Médicine de Paris. Introduction by Prof. G. Marion. Pp. 176. Paris: Masson et Cie., 1939.

IN this exceedingly interesting monograph, the author considers the errors which are not infrequently made in the diagnosis, prognosis and treatment of urogenital conditions. Professor Marion has written a laudatory introduction which has as its main theme the well-established fact that "we learn more through our errors than through our successes."

The experienced urologist cannot fail to be impressed by the frequency with which he encounters the recital of diagnostic or therapeutic errors which his own errors and experience have taught him to avoid. The book is packed full of urologic wisdom and caution which only a man with a large practical experience could have acquired. To take but two simple instances: The author has a high respect for the damage that the cystoscope can do under certain conditions and he warns against its indiscriminate routine use — a warning which should be sounded in the ears of all ambitious surgical and urologic interns. He also tells of the innumerable appendicectomies that have been done erroneously for ureteral and vesicular conditions which had no relevance whatever to the appendix.

This is not new, of course, but it does bear constant repetition and more repetition until these simple yet important pitfalls will have become part of the urologist's or surgeon's consciousness. That is why this book is valuable. It emphasizes the things which we have already learned and are likely to forget, and in addition it teaches valuable lessons that we may never have known.

Step by step, in orderly fashion, the entire urogenital tract is thoroughly yet briefly covered as to non-surgical and surgical affections, beginning with the kidney and continuing through the ureters and the bladder down to the genital organs.

The opening chapters on truth and error in science, especially in psychology and biology, make an instructive dissertation on the significance and practical application of truth and error in the field of surgery and urology, which constitutes the body of the work. The book ends with a consideration of errors in radiology, which every surgeon and urologist should read because of its importance.

It may be said, in conclusion, that a careful study of this valuable volume will help the reader to avoid many snares and pitfalls, with their occasionally unhappy consequences. The bibliography, while rather extensive, is limited to the works, mostly French, consulted by the author.

WOLBARST.

Practical Obstetrics. By P. Brooke Bland, M.D., F.A.C.S., F.I.C.S., Professor Emeritus of Obstetrics, Jefferson Medical College of Philadelphia, and Thaddeus L. Montgomery, M.D., F.A.C.S., Clinical Professor of Obstetrics, Jefferson Medical College of Philadelphia. Third edition. Price, $8. Pp. 877 with 502 engravings and 27 colored plates. Philadelphia: F. A. Davis Co., 1939.

IN the third edition of "Practical Obstetrics" the authors still adhere to the feature which characterized previous editions, "brevity and directness of text." This style lends itself admirably to the needs of the medical student and general practitioner.

The touch pictures which accompany descriptions of the normal and abnormal mechanisms of labor are self explanatory and should be of great value to those who are attempting to master the various mechanisms. The authors still advise packing the uterus following curettage for incomplete abortion, regardless of whether or not the contents have been infected. Statistics show an increased morbidity and mortality following packing technic.

Obstetrical analgesia and anesthesia are discussed with the following conclusions:

1. Morphine is to be used in prolonged labor.
2. Barbituric acid derivatives are to be used for amnesia in short labor, under careful supervision.